

## HUMAN GENE THERAPY PROTOCOLS

Last updated: 5-13-98

## 5810-001 (Open) Gene Marking/Cancer

In Vitro/Tumor Infiltrating Lymphocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Intravenous

Rosenberg, Steven A.; National Institutes of Health, Bethesda, Maryland; *The Treatment of Patients with Advanced Cancer Using Cyclophosphamide, Interleukin-2 and Tumor Infiltrating Lymphocytes.*

RAC Approval: 10-3-88/NIH Approval: 3-2-89

9007-002 (Open) Gene Therapy/Phase I/Monogenic Disease/Severe Combined Immune Deficiency due to Adenosine Deaminase Deficiency  
In Vitro/Autologous Peripheral Blood Cells/CD34+ Autologous Peripheral Blood Cells/Cord Blood/Placenta Cells/Retrovirus/Adenosine Deaminase cDNA/Neomycin Phosphotransferase cDNA/Intravenous

Blaese, R. Michael; National Institutes of Health, Bethesda, Maryland; *Treatment of Severe Combined Immune Deficiency (SCID) due to Adenosine Deaminase (ADA) Deficiency with Autologous Lymphocytes Transduced with the Human ADA Gene: An Experimental Study.*

RAC Approval: 7-31-90/NIH Approval: 9-6-90

## 9007-003 (Open) Gene Therapy/Phase II/Cancer/Melanoma/Immunotherapy

In Vitro/Tumor Infiltrating Lymphocytes/Retrovirus/Cytokine/Tumor Necrosis Factor cDNA/Neomycin Phosphotransferase cDNA/Intravenous

Rosenberg, Steven A.; National Institutes of Health, Bethesda, Maryland; *Gene Therapy of Patients with Advanced Cancer Using Tumor Infiltrating Lymphocytes Transduced with the Gene Coding for Tumor Necrosis Factor.*

RAC Approval: 7-31-90/NIH Approval: 9-6-90

## 9102-004 (Closed) Gene Marking/Cancer/Acute Myelogenous Leukemia

In Vitro/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Brenner, Malcolm K.; Mirro, Joseph; Hanzlitz, Craig; Santana, Victor; and Ihle, James; St. Jude Children's Research Hospital, Memphis, Tennessee; *Autologous Bone Marrow Transplant for Children with Acute Myelogenous Leukemia in First Complete Remission: Use of Marker Genes to Investigate the Biology of Marrow Reconstitution and the Mechanism of Relapse.*

RAC Approval: 2-4-91/NIH Approval: 7-12-91

Closed: 1-21-93

## 9105-005 (Closed) Gene Marking/Cancer/Neuroblastoma

In Vitro/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Brenner, Malcolm K.; Mirro, Joseph; Santana, Victor; and Ihle, James; St. Jude Children's Research Hospital, Memphis, Tennessee; *A Phase II Trial of High-Dose Carboplatin and Etoposide with Autologous Marrow Support for Treatment of Stage D Neuroblastoma in First Remission: Use of Marker Genes to Investigate the Biology of Marrow Reconstitution and the Mechanism of Relapse.*

RAC Approval: 5-31-91/NIH Approval: 7-12-91

Closed: 9-1-92

## 9105-006 (Closed) Gene Marking/Cancer/Neuroblastoma

In Vitro/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Brenner, Malcolm K.; Mirro, Joseph; Santana, Victor; and Ihle, James; St. Jude Children's Research Hospital, Memphis, Tennessee; *A Phase II Trial of High-Dose Carboplatin and Etoposide with Autologous Marrow Support for Treatment of Relapse/Refractory Neuroblastoma Without Apparent Bone Marrow Involvement.*

RAC Approval: 5-31-91/NIH Approval: 7-12-91

Closed: 4-6-93

## 9105-007 (Closed) Gene Marking/Cancer/Chronic Myelogenous Leukemia

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**In Vitro/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant**

Oesserseth, Albert B.; M.D. Anderson Cancer Research Center, Houston, Texas; *Autologous Bone Marrow Transplantation for Chronic Myelogenous Leukemia in which Retroviral Markers are Used to Discriminate between Relapse which Arises from Systemic Disease Remaining after Preparative Therapy Versus Relapse due to Residual Leukemic Cells in Autologous Marrow: A Pilot Trial.*

RAC Approval: 5-31-91/NIH Approval: 7-12-91  
Closed: 6-1-93  
Closed: 4-9-93

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**9105-008 (Closed) Gene Marking/Acute Hepatic Failure  
In Vitro/Autologous Hepatocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Intrahepatic**

Ledley, Fred D.; Woo, Savor; Ferry, George; and Hartwell, Whisenand; Baylor College of Medicine, Houston, Texas; *Hepatocellular Transplantation in Acute Hepatic Failure and Targeting Genetic Markers to Hepatic Cells.*

RAC Approval: 5-30-91/NIH Approval: 7-12-91  
Closed: Protocol Never Initiated

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**9105-009 (Closed) Gene Marking/Cancer/Melanoma  
In Vitro/Tumor Infiltrating Lymphocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Intravenous**

Lotze, Michael T.; University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; *The Administration of Interleukin-2 and Tumor Infiltrating Lymphocytes to Patients with Melanoma.*

RAC Approval: 5-30-91/NIH Approval: 1-17-92  
Closed: 4-95

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**9110-010 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Renal Cell/Colon/Breast/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Tumor Necrosis Factor cDNA/Neomycin Phosphotransferase  
cDNA/Subcutaneous Injection**

Rosenberg, Steven A.; National Institutes of Health, Bethesda, Maryland; *Immunization of Cancer Patients Using Autologous Cancer Cells Modified by Insertion of the Gene for Tumor Necrosis Factor (TNF).*

RAC Approval: 10-7-91/NIH Approval: 10-15-91

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**9110-011 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Renal Cell/Colon/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Interleukin-2 cDNA/Subcutaneous Injection**

Rosenberg, Steven A.; National Institutes of Health, Bethesda, Maryland; *Immunization of Cancer Patients Using Autologous Cancer Cells Modified by Insertion of the Gene for Interleukin-2 (IL-2).*

RAC Approval: 10-7-91/NIH Approval: 10-15-91

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**9110-012 (Closed) Gene Therapy/Phase I/Monogenic Disease/Familial Hypercholesterolemia  
In Vitro/Low Density Lipoprotein Receptor cDNA/Intrahepatic/Portal Vein Catheter**

Wilson, James M.; University of Pennsylvania Medical Center, Philadelphia, Pennsylvania; *Ex Vivo Gene Therapy of Familial Hypercholesterolemia*

RAC Approval: 10-3-91/NIH Approval: 11-14-91  
Closed: 3-11-94

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**9202-013 (Closed) Gene Therapy/Phase I/Cancer/Melanoma/Adenocarcinoma/Immunotherapy  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DC-Chol/HLA-B7/Beta-2 Microglobulin cDNA/Intratumoral/Direct  
Injection/Catheter Delivery to Pulmonary Nodules**

Nabel, Gary J.; University of Michigan, Ann Arbor, Michigan; *Immunotherapy of Malignancy by In Vivo Gene Transfer into Tumors.*

RAC Approval: 2-10-92/NIH Approval: 4-17-92  
Closed: 11-19-92 (Replaced by Protocol #9305-045)

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14 9202-014 (Closed) Gene Marking/Cancer/Acute Myelogenous Leukemia/Acute Lymphocytic Leukemia  
In Vitro/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Cornetta, Kenneth; Indiana University, Indianapolis, Indiana; *Retroviral-Mediated Gene Transfer of Bone Marrow Cells during Autologous Bone Marrow Transplantation for Acute Leukemia.*

RAC Approval: 2-11-92/NIH Approval: 4-17-92  
Closed: 5-1-95

15 9202-015 (Closed) Gene Marking/Cancer/Melanoma/Renal Cell  
In Vitro/CD4+ Autologous Peripheral Blood Lymphocytes/CD8+ Autologous Peripheral Blood Lymphocytes/CD4+ Autologous Tumor  
Infiltrating Lymphocytes/CD8+ Autologous Tumor Infiltrating Lymphocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Intravenous

Economou, James S. and Beldegrun, Aris; University of California at Los Angeles, Los Angeles, California; *The Treatment of Patients with Metastatic Melanoma and Renal Cell Cancer Using In Vitro Expanded and Genetically-Engineered (Neomycin Phosphotransferase) Bulk CD8(+) and/or CD4(+) Tumor Infiltrating Lymphocytes and Bulk CD8(+) and/or CD4(+) Peripheral Blood Leukocytes in Combination with Recombinant Interleukin-2 Alone, or with Recombinant Interleukin-2 and Recombinant Alpha Interferon.*

RAC Approval: 2-11-92/NIH Approval: 4-17-92  
Closed: 8-94

16 9202-016 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Pro-Drug  
In Vitro/Allogeneic Tumor Cells/Lethally Irradiated/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase  
cDNA/Ganciclovir/Intraperitoneal Administration

Freeman, Scott M.; Tulane University Medical Center, New Orleans, Louisiana; *Gene Transfer for the Treatment of Cancer.*

RAC Approval: 2-10-92/NIH Approval: 2-5-93

17 9202-017 (Open) Gene Therapy/Infectious Disease/Human Immunodeficiency Virus  
In Vitro/CD8+ Allogeneic Cytotoxic T Lymphocytes/CD8+ Syngeneic Cytotoxic T Lymphocytes/Retrovirus/Hygromycin  
Phosphotransferase/Herpes Simplex Virus Thymidine Kinase cDNA/Intravenous

Greenberg, Philip D. and Riddell, Stanley; Fred Hutchinson Cancer Research Center, University of Washington, Seattle; *Phase I Study to Evaluate the Safety of Cellular Adoptive Immunotherapy Using Genetically Modified CD8+ HIV-Specific T Cells in HIV Seropositive Individuals.*

RAC Approval: 2-11-92/NIH Approval: 4-17-92

18 9206-018 (Open) Gene Therapy/Phase I/Cancer/Relapsed-Refractory Neuroblastoma/Immunotherapy  
In Vitro/Autologous Neuroblastoma Cells/Allogeneic Partially HLA-Matched/Retrovirus/Cytidine/Interleukin-2 cDNA/Subcutaneous Injection

Brenner, Malcolm K.; Funnari, Wayne; Santana, Victor; Bowman, Laura; and Meyer, William; St. Jude Children's Research Hospital, Memphis, Tennessee; *Phase I Study of Cytokine-Gene Modified Autologous Neuroblastoma Cells for Treatment of Relapsed/Refractory Neuroblastomas.*

RAC Approval: 6-1-92/NIH Approval: 8-14-92

19 9206-019 (Closed) Gene Therapy/Phase I/Cancer/Brain/Pro-Drug  
In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Stereotactic  
Injection

Oldfield, Edward; National Institutes of Health, Bethesda, Maryland; *Gene Therapy for the Treatment of Brain Tumors Using Intra-Tumoral Transduction with the Thymidine Kinase Gene and Intravenous Ganciclovir.* Sponsor: Genetic Therapy, Inc./Novartis

RAC Approval: 6-1-92/NIH Approval: 8-14-92  
Closed: 12-94

20 9206-020 (Closed) Gene Marking/Cancer/Chronic Myelogenous Leukemia  
In Vitro/Autologous Bone Marrow Cells/Autologous Peripheral Blood Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow  
Transplant

Deisseroth, Albert B.; MD Anderson Cancer Center, Houston, Texas; *Use of Two Retroviral Markers to Test Relative Contribution of Marrow and Peripheral Blood Autologous Cells to Recovery After Preparative Therapy.*

RAC Approval: 8-2-92/NIH Approval: 8-14-92  
Closed: 2-13-93

21 9205-021 (Closed) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vitro/Allogeneic Partially HLA-Matched/Retrovirus/Cytokine/Interleukin-2 cDNA/Subcutaneous Injection

Gansbacher, Bernd; Houghton, Alan; and Livingston, Philip; Memorial Sloan Kettering Cancer Center, New York, New York; Immunization with HLA-A2 matched Allogeneic Melanoma Cells that Secrete Interleukin-2 in Patients with Metastatic Melanoma.

RAC Approval: 6-2-92/NIH Approval: 8-14-92  
Closed: 10-19-94

22 9205-022 (Open) Gene Therapy/Phase I/Cancer/Renal Cell/Immunotherapy  
In Vitro/Allogeneic Partially HLA-Matched/Retrovirus/Cytokine/Interleukin-2 cDNA/Subcutaneous Injection

Gansbacher, Bernd; Motzer, Robert; Houghton, Alan; and Bander, Neil; Memorial Sloan Kettering Cancer Center, New York, New York; Immunization with Interleukin-2 Secreting Allogeneic HLA-A2 Matched Renal Cell Carcinoma Cells in Patients with Advanced Renal Cell Carcinoma.

RAC Approval: 6-2-92/NIH Approval: 8-14-92

23 9205-023 (Open) Gene Marking/Cancer/Multiple Myeloma  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Intravenous/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Dunbar, Cynthia; National Institutes of Health, Bethesda, Maryland; Retroviral-Mediated Gene Transfer of Bone Marrow and Peripheral Blood Stem Cells During Autologous Bone Marrow Transplantation for Multiple Myeloma.

RAC Approval: 6-2-92/NIH Approval: 8-14-92

24 9205-024 (Open) Gene Marking/Cancer/Breast  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Intravenous/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Dunbar, Cynthia; National Institutes of Health, Bethesda, Maryland; Retroviral-Mediated Gene Transfer of Bone Marrow and Peripheral Blood Stem Cells During Autologous Bone Marrow Transplantation for Metastatic Breast Cancer.

RAC Approval: 6-2-92/NIH Approval: 8-14-92

25 9205-025 (Open) Gene Marking/Cancer/Chronic Myelogenous Leukemia  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Intravenous/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Dunbar, Cynthia; National Institutes of Health, Bethesda, Maryland; Retroviral-Mediated Gene Transfer of Bone Marrow and Peripheral Blood Stem Cells During Autologous Bone Marrow Transplantation for Chronic Myelogenous Leukemia.

RAC Approval: 6-2-92/NIH Approval: 8-14-92

26 9209-026 (Open) Gene Marking/Infectious Disease/Human immunodeficiency Virus  
In Vitro/Syngeneic Peripheral Blood Lymphocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Intravenous

Walker, Robert E.; National Institutes of Health, Bethesda, Maryland; A Study of the Safety and Survival of the Adoptive Transfer of Genetically Marked Syngeneic Lymphocytes in HIV Infected Identical Twins.

RAC Approval: 9-14-92/NIH Approval: 9-3-93

27 9209-027 (Closed) Gene Marking/Cancer  
In Vitro/G-CSF Mobilized CD34+ Autologous Peripheral Blood Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Schuerling, Friedrich G.; Miller, A. Dusty; and Kiem, Hans-Peter; Fred Hutchinson Cancer Research Center, University of Washington, Seattle, Washington; Study on Contribution of Genetically Marked Peripheral Blood Repopulating Cells to Hematopoietic Reconstitution after Transplantation.

RAC Approval: 9-14-92/NIH Approval: 2-5-93  
Closed: 4-29-97

28 9209-028 (Closed) Gene Marking/Cancer/Lymphoid Malignancies/  
In Vitro/G-CSF Mobilized Autologous Peripheral Blood Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Schuenen, Friedrich G.; Fred Hutchinson Cancer Research Center, University of Washington, Seattle, Washington; *Evaluation of the Use of Recombinant Human G-CSF Stimulated Peripheral Blood Progenitor Cell Supplementation in Autologous Bone Marrow Transplantation in Patients with Lymphoid Malignancies.*

RAC Approval: 9-14-92/NIH Approval: 2-6-93  
Closed: 2-25-94 (Merged with protocol # 9209-027)

29 9209-029 (Closed) Gene Marking/Cancer/  
In Vitro/G-CSF Mobilized CD34+ Autologous Peripheral Blood Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Schuenen, Friedrich G.; Fred Hutchinson Cancer Research Center, University of Washington, Seattle, Washington; *A Trial of G-CSF Stimulated Peripheral Blood Stem Cells for Engraftment in Identical Twins.*

RAC Approval: 9-14-92/NIH Approval: 2-6-93  
Closed: Protocol Never Initiated

30 9209-030 (Open) Gene Marking/Cancer/Chronic Lymphocytic Leukemia/Follicular Non-hodgkins Lymphoma  
In Vitro/Autologous Bone Marrow Cells/Autologous Peripheral Blood Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Deisseroth, Albert B.; University of Texas MD Anderson Cancer Center, Houston, Texas; *Use of Retroviral Markers to Identify Efficacy of Purging and Origin of Relapse Following Autologous Bone Marrow and Peripheral Blood Cell Transplantation in Indolent B Cell Neoplasms (Follicular Non-Hodgkin's Lymphoma or Chronic Lymphocytic Leukemia) Patients.*

RAC Approval: 9-14-92/NIH Approval: 12-2-93

31 9403-031 (Open) Gene Therapy/Phase I/Cancer/Non-small Cell Lung Cancer/Antisense/Tumor Suppressor Gene  
In Vivo/Autologous Tumor Cells/Retrovirus/p53 cDNA/kras Antisense/Intralumorel/Bronchoscope

Roth, Jack A.; The University of Texas MD Anderson Cancer Center, Houston, Texas; and Garver, Robert L., Jr.; University of Alabama at Birmingham, Birmingham, AL; *Clinical Protocol for Modification of Oncogene and Tumor Suppressor Gene Expression in Non-Small Cell Lung Cancer (NSCLC)*

RAC Approval: 3-4-94/NIH Approval: 1-4-95

32 9209-032 (Open) Gene Marking/Cancer/Neuroblastoma  
In Vitro/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Brenner, Malcolm K.; St. Jude Children's Research Hospital, Memphis, Tennessee; *A Phase II Trial of the Baxter Neuroblastoma Bone Marrow Purging System Using Gene Marking to Assess Efficacy.*

RAC Approval: 9-15-92/NIH Approval: 2-5-93

33 9209-033 (Open) Gene Therapy/Phase I/Cancer/Renal Cell/Immunotherapy  
In Vivo/Autologous Fibroblasts/Lethally Irradiated/In Combination with Untransduced Autologous Tumor Cells/Retrovirus/Cytokine/Interleukin-4 cDNA/Subcutaneous Injection

Lotze, Michael T. and Rubin, Joshua T.; University of Pittsburgh, Pittsburgh, Pennsylvania; *Gene Therapy of Cancer: A Pilot Study of IL-4 Gene Modified Antitumor Vaccines.*

RAC Approval: 9-15-92/NIH Approval: 2-5-93

9212-034 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Respiratory Epithelial Cells/Respiratory Epithelial Cells/Adenovirus/Serotype 5/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Intranasal/Respiratory Tract Administration (Bronchoscope)

Crystal, Ronald G.; Rockefeller University Hospital, New York, New York; *A Phase I Study, in Cystic Fibrosis Patients, of the Safety, Toxicity, and Biological Efficacy of a Single Administration of a Replication Deficient, Recombinant Adenovirus Carrying the cDNA of the Normal Human Cystic Fibrosis Transmembrane Conductance Regulator Gene in the Lung.*

RAC Approval: 12-3-92/NIH Approval: 4-16-93

9212-035 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Respiratory Epithelial Cells/Adenovirus/Serotype 5/E2a Temperature Sensitive Mutant/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Intranasal/Respiratory Tract Administration (Bronchoscope)

Wilson, James M.; University of Pennsylvania Medical Center, Philadelphia, Pennsylvania; Simon, Richard H.; University of Michigan Medical Center, Ann Arbor, Michigan; McCoy, Karen; Cystic Fibrosis Center at Ohio State University; *Gene Therapy of Cystic Fibrosis Lung Diseases Using E1 Deleted Adenoviruses: A Phase I Trial.*

RAC Approval: 12-3-92/NIH Approval: 8-26-93

9212-036 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Adenovirus/Serotype 2/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Intranasal

Welsh, Michael J.; Howard Hughes Medical Institute, Iowa City, Iowa; and Smith, Alan E.; Genzyme Corporation, Frammingham, Massachusetts; *Cystic Fibrosis Gene Therapy Using an Adenovirus Vector: In Vivo Safety and Efficacy in Nasal Epithelium.* Sponsor: Genzyme Corporation

RAC Approval: 12-4-92/NIH Approval: 4-16-93

9303-037 (Open) Gene Therapy/Phase II/Cancer/Glioblastoma/Pro-Drug  
In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Direct Injection

Van Gelder, John C.; University of Iowa, Iowa City, Iowa; Berger, Mitchell; University of California, San Francisco, California; Prados, Michael; University of Washington, Seattle, Washington; Wamlick, Ronald; University of Cincinnati Medical Center, Cincinnati, Ohio; Schild, Clifford; University of Texas Southwestern Medical Center, Dallas, Texas; Fetsell, Michael; Columbia Presbyterian Medical Center, New York, New York; Schramm, Johannes; Neurochirurgische Universitätsklinik, Bonn, Germany; Westphal, Manfred; University Clinic Eppendorf, Hamburg, Germany; Tonn, Jörg-Christian; University Kliniken, Würzburg, Germany; Mouradjian, Robert; Notre-Dame Hospital, Montreal, Quebec, Canada; Shaffrey, Mark; University of Virginia, Charlottesville, Virginia; Asher, Anthony; Charlotte Neurological Associates and Presbyterian Hospital, Charlotte, North Carolina; Epstein, Mel; Brown University, Providence, Rhode Island; Schmitz-Schackert, Gabriele Anna Maria; University Klinikum Karl-Gustav-Campus, Dresden, Germany; Mendez, Ivar; Victoria General Hospital, Nova Scotia, Canada; Bernstein, Mark; The Toronto Hospital, Toronto, Ontario, Canada; *Gene Therapy for the Treatment of Recurrent Glioblastoma Multiforme with In Vivo Tumor Transduction with the Herpes Simplex Thymidine Kinase Gene/Ganciclovir System.* Sponsor: Genete Therapy, Inc./Novartis

RAC Approval: 3-1-93/NIH Approval: 4-16-93

9303-038 (Open) Gene Marking/Cancer/Leukemia/Non-malignant Disorders  
In Vitro/Epstein-Barr Virus Specific Allogeneic Cytotoxic T Lymphocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Heslop, Helen E.; Brenner, Malcolm K.; and Rooney, Cliona; St. Jude Children's Research Hospital, Memphis, Tennessee; *Administration of Neomycin Resistance Gene Marked EBV Specific Cytotoxic T Lymphocytes to Recipients of Mismatched-Related or Phenotypically Similar Unrelated Cord Marrow Grafts.*

RAC Approval: 3-2-93/NIH Approval: 4-16-93

9303-039 (Open) Gene Marking/Cancer/Acute Myelogenous Leukemia  
In Vitro/Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Brenner, Malcolm K.; Krance, Robert; Heslop, Helen E.; Santana, Victor; and Ihle, James; St. Jude Children's Research Hospital, Memphis, Tennessee; *Assessment of the Efficacy of Purging by Using Gene-Marked Autologous Marrow Transplantation for Children with Acute Myelogenous Leukemia in First Complete Remission.*

RAC Approval: 3-2-93/NIH Approval: 4-16-93

9303-040 (Open) Gene Therapy/Phase I/Cancer/Renal Cell/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Granulocyte-Macrophage Colony Stimulating Factor cDNA/Subcutaneous Injection

Simons, Jonathan; Johns Hopkins Oncology Center, Baltimore, Maryland; *Phase I Study of Non-Replicating Autologous Tumor Cell Injections Using Cells Prepared With or Without Granulocyte-Macrophage Colony Stimulating Factor Gene Transduction in Patients with Metastatic Renal Cell Carcinoma.*

RAC Approval: 3-1-93/NIH Approval: 12-2-93

40 9303-041 (Closed) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Respiratory Epithelial Cells/Adenovirus/Serotype 5/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Intranasal/Respiratory Tract Administration (Bronchoscope)

Wilmot, Robert W. and Whitsett, Jeffrey; Children's Hospital Medical Center, Cincinnati, Ohio; and Trapnell, Bruce; Genetic Therapy, Inc., Gaithersburg, Maryland; *A Phase I Study of Gene Therapy of Cystic Fibrosis Utilizing a Replication Deficient Recombinant Adenovirus Vector to Deliver the Human Cystic Fibrosis Transmembrane Conductance Regulator cDNA to the Airways.* Sponsor: Genetic Therapy, Inc./Novartis

RAC Approval: 3-2-93/NIH Approval: 4-16-93  
Closed: 4-28-93 (IND Withdrawn)

41 9303-042 (Closed) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Adenovirus/Serotype 5/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Intranasal

Boucher, Richard C. and Knowles, Michael R.; University of North Carolina, Chapel Hill, North Carolina; *Gene Therapy for Cystic Fibrosis Using E1 Deleted Adenovirus: A Phase I Trial in the Nasal Cavity.*

RAC Approval: 3-2-93/NIH Approval: 10-7-93  
Closed: 10-94

42 9306-043 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Retrovirus/Gamma Interferon cDNA/Subcutaneous Injection

Seigler, Hilliard F.; Duke University Medical Center, Durham, North Carolina; and McNeill, James A.; Viagene, Inc., San Diego, California; *A Phase I Trial of Human Gamma Interferon-Transduced Autologous Tumor Cells in Patients With Disseminated Malignant Melanoma.*

RAC Approval: 6-7-93/NIH Approval: 9-3-93

43 9306-044 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Chemoprotection  
In Vitro/CD34+ Autologous Bone Marrow Cells/Retrovirus/Multi-Drug Resistance-1 cDNA/Bone Marrow Transplant

Deisseroth, Albert B.; Kavanagh, John; and Champlin, Richard; University of Texas MD Anderson Cancer Center, Houston, Texas; *Use of Safety-Modified Retroviruses to Introduce Chemotherapy Resistance Sequences into Normal Hematopoietic Cells for Chemoprotection During the Therapy of Ovarian Cancer: A Pilot Trial*

RAC Approval: 6-7-93/NIH Approval: 12-2-93

44 9306-045 (Open) Gene Therapy/Phase I/Cancer/Immunotherapy  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/HLA-B7/Beta-2 Microglobulin cDNA/Intratumoral/Direct Injection/Catheter Delivery to Pulmonary Nodules

Nabel, Gary J.; University of Michigan Medical Center, Ann Arbor, Michigan; *Immunotherapy for Cancer by Direct Gene Transfer into Tumors.*

RAC Approval: 6-7-93/NIH Approval: 9-3-93

45 9306-046 (Open) Gene Therapy/Phase I/Monogenic Disease/Gaucher Disease  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Glucocerebrosidase cDNA/Bone Marrow Transplant

Benninger, John A.; University of Pittsburgh, Pittsburgh, Pennsylvania; *Gene Therapy for Gaucher Disease: Ex Vivo Gene Transfer and Autologous Transplantation of CD34(+) Cells.*

RAC Approval: 6-7-93/NIH Approval: 9-3-93

46 9306-047 (Closed) Gene Therapy/Phase I/Monogenic Disease/Gaucher Disease  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Glucocerebrosidase cDNA/Bone Marrow Transplant

Karlsson, Stefan and Dunbar, Cynthia; National Institutes of Health, Bethesda, Maryland; and Kuhn, Donald B.; Childrens Hospital Los Angeles, Los Angeles, California; *Retroviral Mediated Transfer of the cDNA for Human Glucocerebrosidase into Hematopoietic Stem Cells of Patients with Gaucher Disease*. Sponsor: Genetic Therapy, Inc./Novartis

RAC Approval: 6-7-93/NIH Approval: 9-3-93  
Closed: 4-30-97 (IND Withdrawn)

9306-048 (Closed) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Immunotherapy  
In Vivo/Autologous Muscle Cells/Retrovirus/HIV-1III B Envelope Protein/Intramuscular Injection

Galpin, Jeffrey E.; University of Southern California: Casclato, Dennis A.; Shared Medical Research Foundation, Tarzana, California; and Merritt, James A.; Viagene, Inc., San Diego, California; *A Preliminary Study to Evaluate the Safety and Biologic Effects of Murine Retroviral Vectors Encoding HIV-1 Genes (HIV-1TV) in Asymptomatic Subjects Infected with HIV-1*. Sponsor: Chiron Corporation

RAC Approval: 6-7-93/NIH Approval: 9-3-93  
Closed: 9-8-94

9306-049 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/Antisense  
In Vitro/CD4+ Autologous Peripheral Blood Cells/Retrovirus/Particle Mediated Gene Transfer (Accession)/RSV-tar/Rev 1M10/Intravenous

Nabel, Gary J.; University of Michigan Medical Center, Ann Arbor, Michigan; *A Molecular Genetic Intervention for AIDS - Effects of a Transdominant Negative Form of Rev*.

RAC Approval: 6-7-93/NIH Approval: 9-3-93

9306-050 (Open) Gene Therapy/Phase I/Cancer/Astrocytoma/Pro-Drug  
In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Ommaya Injection

Raffel, Corey; Mayo Clinic, Rochester, Minnesota; Vilablanca, Judith; Childrens Hospital Los Angeles, Los Angeles, California; Packer, Roger, Childrens National Medical Center, Washington, DC; Tonn, Jorg-Christian, Neurochirurgische Klinik und Poliklinik, Universitäts-Klinik, Würzburg, Germany; and Burdack, Stefan; University Center for Paediatrics, Heinrich-Heine Universität, Düsseldorf, Germany; *Gene Therapy for the Treatment of Recurrent Pediatric Malignant Astrocytomas with In Vivo Tumor Transduction with the Herpes Simplex Thymidine Kinase Gene*. Sponsor: Genetic Therapy, Inc./Novartis

RAC Approval: 6-8-93/NIH Approval: 9-3-93

9306-051 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Brain/Chemoprotection  
In Vitro/CD34+ Autologous Bone Marrow Cells/Retrovirus/Multi-Drug Resistance-1 cDNA/Bone Marrow Transplant

Headorffer, Charles and Antman, Karen; Columbia University College of Physicians and Surgeons, New York, New York; *Human MDR Gene Transfer in Patients with Advanced Cancer*.

RAC Approval: 6-8-93/NIH Approval: 9-3-93

9306-052 (Open) Gene Therapy/Phase I/Cancer/Glioblastoma/Antisense  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/Lipofectin (Gibco BRL)/Insulin-like Growth Factor Antisense/Subcutaneous Injection

Ilan, Joseph; Case Western Reserve University School of Medicine and University Hospitals of Cleveland, Cleveland, Ohio; *Gene Therapy for Human Brain Tumors Using Epitome-Based Antisense cDNA Transcription of insulin-Like Growth Factor I*.

RAC Approval: 6-8-93/NIH Approval: 12-2-93

9309-053 (Open) Gene Therapy/Phase I/Cancer/Small Cell Lung Cancer/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/Lipofectin (Gibco BRL)/Cytokine/Interleukin-2 cDNA/Neomycin Phosphotransferase cDNA/Subcutaneous Injection

Cassileth, Peter, Podack, Eckhard R.; Sidhar, Kasi; University of Miami; and Severa, Nirmol; Miami Veterans Administration Hospital, Miami, Florida; *Phase I Study of Transfected Cancer Cells Expressing the Interleukin-2 Gene Product in Limited Stage Small Cell Lung Cancer*.

RAC Approval: 9-9-93/NIH Approval: 12-2-93

53 9309-054 (Open) Gene Therapy/Phase I/Cancer/Breast/Chemoprotection  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Multi-Drug Resistance-1 cDNA/Intravenous

O'Shaughnessy, Joyce: Kentucky Medical Oncology Association, Louisville, Kentucky; *Retroviral Mediated Transfer of the Human Multi-Drug Resistance Gene (MDR-1) into Hematopoietic Stem Cells During Autologous Transplantation after Intensive Chemotherapy for Breast Cancer.*

RAC Approval: 9-9-93/NIH Approval: 10-7-93

54 9309-055 (Open) Gene Therapy/Phase I/Cancer/Brain Tumors/Pro-Drug  
In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Direct Injection

Kun, Larry E.; Sanford, R. A.; Brenner, Malcolm K.; and Heideman, Richard L.; St. Jude Childrens Research Hospital, Memphis, Tennessee; and Oldfield, Edward H.; National Institutes of Health, Bethesda, Maryland; *Gene Therapy for Recurrent Pediatric Brain Tumors.* Sponsor: Genetic Therapy, Inc./Novartis

RAC Approval: 9-9-93/NIH Approval: 10-7-93

55 9309-056 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vitro/Allogeneic Tumor Cells/Lethally Irradiated/Retrovirus/Interleukin-2 cDNA/Neomycin Phosphotransferase cDNA/Subcutaneous Injection

Des Gupta, Tapas K. and Cohen, Edward P.; University of Illinois at Chicago, Chicago, Illinois; *Immunization of Malignant Melanoma Patients with Interleukin 2-Secreting Melanoma Cells Expressing Defined Allogeneic Histocompatibility Antigens.*

RAC Approval: 9-10-93/NIH Approval: 4-19-94

56 9309-057 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus-1/Replication Inhibition/Hairpin Ribozyme  
In Vitro/CD4+ Peripheral Blood Cells/Retrovirus/Hairpin Ribozyme/Intravenous

Wong, Stasi, Flossie; Poeschla, Eric; and Looney, David; University of California, San Diego, California; *A Phase I Clinical Trial to Evaluate the Safety and Effects in HIV-1 Infected Humans of Autologous Lymphocytes Transduced with a Ribozyme that Cleaves HIV-1 RNA.*

RAC Approval: 9-10-93/NIH Approval: 10-25-94

57 9309-058 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vitro/Allogeneic Tumor Cells/Lethally Irradiated/In Combination with Untransduced Autologous Tumor Cells/Retrovirus/Interleukin-2 cDNA/Subcutaneous Injection

Economou, James S. and Glasby, John A.; University of California Medical Center, Los Angeles, California; *Genetically Engineered Autologous Tumor Vaccines Producing Interleukin-2 for the Treatment of Metastatic Melanoma.*

RAC Approval: 9-10-93/NIH Approval: 12-2-93

58 9312-059 (Closed) Gene Therapy/Phase I/Cancer/Leptomeningeal Carcinomatosis/Pro-Drug  
In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intraventricular Injection/Subarachnoid Injection

Oldfield, Edward H. and Ram, Zvi; National Institutes of Health, Bethesda, Maryland; *Intrathecal Gene Therapy for the Treatment of Leptomeningeal Carcinomatosis.* Sponsor: Genetic Therapy, Inc./Novartis

RAC Approval: 12-2-93/NIH Approval: 1-20-94

Closed: 1/95

59 9312-060 (Open) Gene Therapy/Phase I/Cancer/Colon/Immunotherapy  
In Vitro/Autologous Fibroblasts/Lethally Irradiated/In Combination with Untransduced Autologous Tumor Cells/Retrovirus/Interleukin-2 cDNA/Subcutaneous Injection

Sobel, Robert E. and Royston, Ivor; San Diego Regional Cancer Center, San Diego, California; *Injection of Colon Carcinoma Patients with Autologous Irradiated Tumor Cells and Fibroblasts Genetically Modified to Secrete Interleukin-2.*

RAC Approval: 12-2-93/NIH Approval: 1-4-95

60 9312-061 (Closed) Gene Therapy/Phase I/Monogenic Disease/Gaucher Disease  
In Vivo/G-CSF Mobilized CD34+ Autologous Peripheral Blood Cells/Retrovirus/Glucocerebrosidase cDNA/Intravenous

Schuerling, Friedrich; Fred Hutchinson Cancer Research Center, Seattle, Washington; *Retrovirus-Mediated Transfer of the cDNA for Human Glucocerebrosidase into Peripheral Blood Repopulating Cells of Patients with Gaucher's Disease.*

RAC Approval: 12-2-93/NIH Approval: 11-15-94  
Closed: 4-29-97

61 9312-062 (Closed) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Immunotherapy  
In Vivo/Autologous Muscle Cells/Retrovirus/HIV-1III B Envelope Protein/Intramuscular Injection

Hauorich, Richard; University of California at San Diego Treatment Center, San Diego, California; and Menitt, James A.; Viagene, Inc., San Diego, California; *An Open Label, Phase I/II Clinical Trial to Evaluate the Safety and Biological Activity of HIV-1(T) (HIV-1 IIEnv/Retroviral Vector) in HIV-1 Infected Subjects.*

RAC Approval: 12-3-93/NIH Approval: 4-19-94  
Closed: 10-13-94

62 9312-063 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vivo/Allogeneic Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/Lipofectin (Gibco BRL)/B7 (CD80) cDNA/Neomycin Phosphotransferase cDNA/Subcutaneous Injection

Sznol, Mario; National Institutes of Health, Frederick, Maryland; *A Phase I Trial of B7-Transfected Lethally Irradiated Allogeneic Melanoma Cell Lines to Induce Cell Mediated Immunity Against Tumor-Associated Antigens Presented by HLA-A2 or HLA-A1 in Patients with Stage IV Melanoma.*

RAC Approval: 12-3-93/NIH Approval: 4-19-94

63 9312-064 (Closed) Gene Therapy/Phase I/Cancer/Colon/Hepatic Metastases/Immunotherapy  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Vical VCL-1005/HLA-B7/Beta-2 Microglobulin cDNA/Intratumoral/Hepatic Injection

Rubin, Joseph; Mayo Clinic, Rochester, Minnesota; *Phase I Study of Immunotherapy of Advanced Colorectal Carcinoma by Direct Gene Transfer into Hepatic Metastases.* Sponsor: Vical, Incorporated

RAC Approval: 12-3-93/NIH Approval: 4-19-94  
Closed: 3-16-95 (Closed to accrual - maximum number of subjects entered)

64 9312-065 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vivo/Autologous Tumor Cells/Lethally Irradiated/Used in Combination with Anti-CD3 and Interleukin-2 Primed Autologous Lymph Node Cells to Prime Autologous Peripheral Blood Cells In Vivo/Retrovirus/GM-CSF cDNA/Intravenous

Chang, Alfred E.; University of Michigan, Ann Arbor, Michigan; *Adoptive Immunotherapy of Cancer with Activated Lymph Node Cells Primed In Vivo with Autologous Tumor Cells Transduced with the GM-CSF Gene.*

RAC Approval: 12-3-93/NIH Approval: 8-23-94

65 9312-066 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Cationic Liposome Complex/DMRIE-DOPE/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Intranasal

Sorscher, Eric J. and Logan, James L.; University of Alabama, Birmingham, Alabama; *Gene Therapy for Cystic Fibrosis Using Cationic Liposome Mediated Gene Transfer: A Phase I Trial of Safety and Efficacy in the Nasal Airway.*

RAC Approval: 12-3-93/NIH Approval: 1-4-95

66 9312-067 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Maxillary Sinus Epithelial Cells/Adenovirus/Serotype 2/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Intranasal/Maxillary Sinus Administration

Welsh, Michael J.; Howard Hughes Medical Institute, Iowa City, Iowa; *Adenovirus-Mediated Gene Transfer of CFTR to the Nasal Epithelium and Maxillary Sinus of Patients with Cystic Fibrosis.* Sponsor: Genzyme Corporation

RAC Approval: 12-3-93/NIH Approval: 2-10-94

9403-068 (Open) Gene Therapy/Phase I/Cancer/Neuroblastoma/Immunotherapy  
In Vivo/Autologous Tumor Cells/Allogeneic Tumor Cells/Lethally Irradiated/Retrovirus/Gamma Interferon cDNA/Subcutaneous Injection

Rosenblatt, Joseph; University of California, Los Angeles, California; Seeger, Robert; Childrens Hospital, Los Angeles, California; and Merritt, James A.;  
Vegene, Inc., San Diego, California; A Phase I Study of Immunization with Gamma Interferon Transduced Neuroblastoma Cells.

RAC Approval: 3-3-94/NIH Approval: 10-25-94

9403-069 (Closed) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Immunotherapy  
In Vivo/CD8+ Syngeneic Peripheral Blood Cells/Retrovirus/CD4-zeta Chimeric Receptor/Intravenous/Concurrent Interleukin-2 Therapy

Walker, Robert; National Institutes of Health, Bethesda, Maryland; A Phase I/II Pilot Study of the Safety of the Adoptive Transfer of Syngeneic Gene-Modified Cytotoxic T-Lymphocytes in HIV-Infected Identical Twins. Sponsor: NIH/Cell GeneSys, Inc.

RAC Approval: 3-3-94/NIH Approval: 8-23-94  
Closed: 2-97

9403-070 (Open) Gene Therapy/Phase I/Monogenic Disease/Alpha-1-Antitrypsin Deficiency  
In Vivo/Nasal Epithelial Cells/Respiratory Epithelial Cells/Cationic Liposome Complex/DC-Chol-DOPE/Alpha-1 Antitrypsin  
cDNA/Intranasal/Respiratory Tract Administration (Bronchoscope)

Bingham, Kenneth; Clinical Research Center at Vanderbilt University Medical Center, Nashville, Tennessee; Expression of an Exogenously Administered Human Alpha-1-Antitrypsin Gene in the Respiratory Tract of Humans. Sponsor: Gene Medicine, Inc.

RAC Approval: 3-3-94/NIH Approval: 10-25-94

9403-071 (Closed) Gene Therapy/Phase I/Cancer/Renal Cell/Immunotherapy  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Viral VCL-1005/HLA-B\*7/Beta-2 Microglobulin  
cDNA/Intratumoral/Direct Injection

Vogelzang, Nicholas; the University of Chicago, Chicago, Illinois; Phase I Study of Immunotherapy for Metastatic Renal Cell Carcinoma by Direct Gene Transfer into Metastatic Lesions. Sponsor: Viral, Incorporated

RAC Approval: 3-4-94/NIH Approval: 4-19-94  
Closed: 4-5-95 (Closed to accrual - maximum number of subjects entered)

9403-072 (Closed) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Viral VCL-1005/HLA-B\*7/Beta-2 Microglobulin  
cDNA/Intratumoral/Direct Injection

Hersh, Evan; Arizona Cancer Center, Tucson, Arizona; and Akporiaye, Harris; Stopeck, Unger; and Warnake; University of Arizona, Tucson, Arizona;  
Phase I Study of Immunotherapy of Malignant Melanoma by Direct Gene Transfer. Sponsor: Viral, Incorporated

RAC Approval: 3-4-94/NIH Approval: 4-19-94  
Closed: 3-27-95 (Closed to accrual - maximum number of subjects entered)

9406-073 (Open) Gene Therapy/Phase I/Colon/Immunotherapy  
In Vivo/Autologous Tumor Cells/Plasmid DNA/Carcinoembryonic Antigen Plasmid Expression Vector/Kanamycin Resistance  
cDNA/Intratumoral/Direct Injection

Cunliffe, David; University of Alabama, Birmingham, Alabama; Phase I Trial of a Polynucleotide Augmented Anti-Tumor Immunization to Human Carcinoembryonic Antigen in Patients with Metastatic Colorectal Cancer.

RAC Approval: 8-10-95/NIH Approval: 7-27-95

9406-074 (Open) Gene Therapy/Phase I/Other/Rheumatoid Arthritis  
In Vivo/Autologous Synovial Cells/Retrovirus/Interleukin-1 Receptor Antagonist Protein cDNA/Intrajoint/Metacarpal Phalangeal Joints

Evans, C. H. and Robbins, Paul; University of Pittsburgh, Pittsburgh, Pennsylvania; Clinical Trial to Assess the Safety, Feasibility, and Efficacy of

Transferring a Potentially Anti-erthritic Cytokine Gene to Human Joints with Rheumatoid Arthritis.

RAC Approval: 6-9-94/NIH Approval: 7-27-95

9406-075 (Open) Gene Marking/Cancer/Ovarian  
In Vitro/Autologous Peripheral Blood Cells/Autologous Tumor Infiltrating Lymphocytes/Retrovirus/Neomycin Phosphotransferase  
cDNA/Intraperitoneal

Freedman, Ralph; MD Anderson Cancer Center, Houston, Texas; Use of a Retroviral Vector to Study the Trafficking Patterns of Purified Ovarian TIL Populations Used in Intraperitoneal Adoptive Immunotherapy of Ovarian Cancer Patients: A Pilot Study.

RAC Approval: 6-9-94/NIH Approval: 7-12-94

9406-076 (Open) Gene Marking/Cancer/Pediatric Malignancies  
In Vitro/CD34+ Autologous Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Heslop, Helen; Brenner, Malcolm, K.; and Krance, Robert; St. Jude Childrens Research Hospital, Memphis, Tennessee; Use of Double Marking with Retroviral Vectors to Determine the Rate of Reconstitution of Untreated and Cytokine Expanded CD34(+) Selected Marrow Cells in Patients Undergoing Autologous Bone Marrow Transplantation.

RAC Approval: 6-9-94/NIH Approval: 7-12-94

9406-077 (Open) Gene Therapy/Phase I/Cancer/Breast/Chemoprotection  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Multi-Drug Resistance-1 cDNA/Intravenous

Deisseroth, Albert; Hortobaghy, Gabriel; Champain, Richard; and Holmes, Frankie; MD Anderson Cancer Center, Houston, Texas; Use of Safety-Modified Retroviruses to Introduce Chemotherapy Resistance Sequences into Normal Hematopoietic Cells for Chemoprotection During the Therapy of Breast Cancer: A Pilot Trial.

RAC Approval: 6-9-94/NIH Approval: 7-12-94

9406-078 (Open) Gene Therapy/Phase I/Monogenic Disease/Fanconi Anemia  
In Vitro/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Fanconi Anemia Complementation Group C cDNA/Intravenous

Uu, Johnson, M. and Young, Neal S.; National Institutes of Health, Bethesda, Maryland; and Wegner, John E., University of Minnesota, Minneapolis, Minnesota; Retroviral Mediated Gene Transfer of the Fanconi Anemia Complementation Group C Gene to Hematopoietic Progenitors of Group C Patients.

RAC Approval: 6-9-94/NIH Approval: 2-12-95

9406-079 (Open) Gene Therapy/Phase I/Cancer/Non-small Cell Lung Cancer/Tumor Suppressor Gene  
In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intratumoral/Bronchoscope

Roth, Jack A.; MD Anderson Cancer Center, Houston, Texas; Clinical Protocol for Modification of Tumor Suppressor Gene Expression and Induction of Apoptosis in Non-Small Cell Lung Cancer (NSCLC) with an Adenovirus Vector Expressing Wildtype p53 and Cisplatin.

RAC Approval: 6-10-94 and 9-11-95/NIH Approval: 9-21-95

9406-080 (Open) Gene Therapy/Phase I/Cancer/Glioblastoma/Immunotherapy  
In Vitro/Autologous Fibroblasts/Lethally Irradiated/In Combination with Untransduced Autologous Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Interleukin-2 cDNA/Subcutaneous Injection

Sobel, Robert and Royston, Ivor; San Diego Regional Cancer Center, San Diego, California; Injection of Glioblastoma Patients with Tumor Cells Genetically Modified to Secrete Interleukin-2 (IL-2): A Phase I Study.

RAC Approval: 6-10-94/NIH Approval: 7-12-94

9406-081 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Lymphoma/Breast/Head and Neck Cancer/Immunotherapy  
In Vitro/Autologous Fibroblasts/Lethally Irradiated/Retrovirus/Cytokine/Interleukin-12 cDNA/Neomycin Phosphotransferase  
cDNA/Intratumoral/Direct Injection

Lotze, Michael T.; University of Pittsburgh, Pittsburgh, Pennsylvania; IL-12 Gene Therapy Using Direct Injection of Tumor with Genetically Engineered Autologous Fibroblasts.

RAC Approval: 6-10-94/NIH Approval: 2-10-95

80 9408-082 (Open) Gene Therapy/Phase I/Cancer/Prostate/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Granulocyte-Macrophage Colony Stimulating Factor  
cDNA/Subcutaneous Injection

Simons, Jonathan; Johns Hopkins Oncology Center, Baltimore, Maryland; Phase I/II Study of Autologous Human GM-CSF Gene Transduced Prostate Cancer Vaccines in Patients with Metastatic Prostate Carcinoma.

NIH/ORDA Approval: 8-3-94 (Accelerated Review)

81 9409-083 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Respiratory Epithelial Cells/Adeno-Associated Virus/Cystic Fibrosis Transmembrane Conductance Regulator  
cDNA/Intranasal/Respiratory Tract Administration (Bronchoscope)

Zeltin, Pamela L.; Johns Hopkins Childrens Center, Baltimore, Maryland; A Phase I Study of an Adeno-associated Virus-CFTR Gene Vector in Adult CF Patients with Mild Lung Disease. Sponsor: Targeted Genetics Corporation

RAC Approval: 9-12-94/NIH Approval: 11-15-94

82 9409-084 (Open) Gene Therapy/Phase I/Cancer/Breast/Antisense  
In Vivo/Autologous Tumor Cells/Retrovirus/c-fos Antisense RNA/c-myc Antisense/Intrapleural/Intraperitoneal

Holt, Jeffrey, and Artaaga, Carlos B.; Clinical Research Center at Vanderbilt University Medical Center, Nashville, Tennessee; Gene Therapy for the Treatment of Metastatic Breast Cancer by In Vivo Infection with Breast-Targeted Retroviral Vectors Expressing Antisense c-fos or Antisense c-myc RNA.

RAC Approval: 9-12-94/NIH Approval: 1-4-95

83 9409-085 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Respiratory Epithelial Cells/Adenovirus/Serotype 5/Cystic Fibrosis Transmembrane Conductance Regulator  
cDNA/Intranasal/Respiratory Tract Administration (Bronchoscopy/Multiple Dose)

Crystal, Ronald G.; New York Hospital-Cornell Medical Center, New York, New York; Evaluation of Repeat Administration of a Replication Deficient, Recombinant Adenovirus Containing the Normal Cystic Fibrosis Transmembrane Conductance Regulator cDNA to the Airways of Individuals with Cystic Fibrosis.

RAC Approval: 9-12-94/NIH Approval: 11-30-94

84 9409-086 (Open) Gene Therapy/Phase I/Cancer/Breast/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/Avectin™/Cytokine/Interleukin-2 cDNA/Subcutaneous  
Injection

Lyerly, H. Kim; Duke University Medical Center, Durham, North Carolina; A Pilot Study of Autologous Human Interleukin-2 Gene Modified Tumor Cells in Patients with Refractory or Recurrent Metastatic Breast Cancer.

RAC Approval: 9-12-94/NIH Approval: 10-25-94

85 9409-087 (Open) Gene Therapy/Phase I/Monogenic Disease/Hunter Syndrome  
In Vitro/Autologous Peripheral Blood Cells/Retrovirus/Iduronate-2-Sulfatase cDNA/Intravenous

Whitby, Chester B.; University of Minnesota, Minneapolis, Minnesota; Retroviral-Mediated Transfer of the Iduronate-2-Sulfatase Gene into Lymphocytes for Treatment of Mild Hunter Syndrome (Mucopolysaccharidosis Type II).

RAC Approval: 9-13-94/NIH Approval: 8-20-95

86 9409-088 (Open) Gene Therapy/Phase I/Other/Peripheral Artery Disease  
In Vivo/Vascular Endothelial Cells/Plasmid DNA/Vascular Endothelial Growth Factor cDNA/Intraarterial/Angioplasty Catheter/Hydrogel Coated  
Balloon

Isner, Jeffrey M. and Walsh, Kenneth: St. Elizabeth's Medical Center, Tufts University, Boston, Massachusetts; *Arterial Gene Transfer for Therapeutic Angiogenesis in Patients with Peripheral Artery Disease.*

RAC Approval: 9-13-94/NIH Approval: 11-15-94

87 9409-089 (Open) Gene Therapy/Phase I/Cancer/Central Nervous System/Pro-Drug  
In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Stereotactic Injection

Sok, Stephen L. and Alavi, Jane B.: University of Pennsylvania Medical Center, Philadelphia, Pennsylvania; *Treatment of Advanced CNS Malignancy with the Recombinant Adenovirus H5.020RSVTK: A Phase I Trial.*

RAC Approval: 9-13-94/NIH Approval: 2-2-95

88 9409-090 (Open) Gene Therapy/Phase I/Cancer/Pro-Drug  
In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intracavitary

Albelda, Steven M.: University of Pennsylvania Medical Center, Philadelphia, Pennsylvania; *Treatment of Advanced Mesothelioma with the Recombinant Adenovirus H5.0:0RSVTK: A Phase I Trial.*

RAC Approval: 9-13-94/NIH Approval: 1-4-95

89 9409-091 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Respiratory Epithelial Cells/Adenovirus/Serotype 2/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Respiratory Epithelial Cells/Bronchoscope

Dorkin, Henry L.: New England Medical Center, Tufts University, Boston, Massachusetts; and Lapey, Allen: Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts; *Adenovirus Mediated Gene Transfer for Cystic Fibrosis: Safety of Single Administration in the Lung (lober intubation).* Sponsor: Genzyme Corporation

NIH/ORDA Approval: 10-5-94 (Accelerated Review)

90 9411-092 (Open) Gene Marking/Cancer/Lymphoma/Breast  
In Vitro/CD34+ Autologous Bone Marrow Cells/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Douer, Dan: University of Southern California; Kenneth Norris Comprehensive Cancer Center and Hospital, Los Angeles, California; *High Dose Chemotherapy and Autologous Bone Marrow plus Peripheral Blood Stem Cell Transplantation for Patients with Lymphoma or Metastatic Breast Cancer: Use of Marker Genes to Investigate the Biology of Hematopoietic Reconstitution in Adults.*

NIH/ORDA Approval: 11-18-94 (Accelerated Review)

91 9411-093 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Granulocyte-Macrophage Colony Stimulating Factor cDNA/Subcutaneous Injection

Dranoff, Glen; Dana Farber Cancer Institute, Boston, Massachusetts; *A Phase I Study of Vaccination with Autologous, Irradiated Melanoma Cells Engineered to Secrete Human Granulocyte-Macrophage Colony Stimulating Factor.*

NIH/ORDA Approval: 11-23-94 (Accelerated Review)

92 9412-094 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Respiratory Epithelial Cells/Adenovirus/Serotype 2/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Respiratory Epithelial Cells/Aerosol Administration

Dorkin, Henry L.: New England Medical Center, Tufts University, Boston, Massachusetts; and Lapey, Allen: Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts; *Adenovirus Mediated Gene Transfer for Cystic Fibrosis: Safety of a Single Administration in the Lung (aerosol administration).* Sponsor: Genzyme Corporation

RAC Approval: 12-1-94/NIH Approval: 7-24-95

9412-095 (Open) Gene Therapy/Phase I/Solid Tumors/Lymphoma/Immunotherapy

In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Vical VCL-1102/Cytokine/Interleukin-2 cDNA/Intratumoral/Direct Injection

Hersh, Evan; Arizona Cancer Center, Tucson, Arizona; and Rinehart, John; Scott and White Clinic; Temple Texas. Phase I Trial of Interleukin-2 Plasmid DNA/DMRIE/DOPE Lipid Complex as an Immunotherapeutic Agent in Solid Malignant Tumors or Lymphomas by Direct Gene Transfer. Sponsor: Vical, Incorporated

RAC Approval: 12-1-94/NIH Approval: 3-2-95

9412-096 (Open) Gene Therapy/Phase I/Cancer/Head and Neck Squamous Cell/Tumor Suppressor Gene In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intratumoral/Bronchoscope

Clayman, Gary; MD Anderson Cancer Center, Houston, Texas; Clinical Protocol for Modification of Tumor Suppressor Gene Expression in Head and Neck Squamous Cell Carcinoma (HNSCC) with an Adenovirus Vector Expressing Wild-type p53

RAC Approval: 12-2-94 and 8-11-95/NIH Approval: 9-21-95

9412-097 (Open) Gene Therapy/Phase I/Cancer/Colon/Hepatic Metastases/Tumor Suppressor Gene In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intrahepatic/Hepatic Artery/Bolus Infusion

Venook, Alan and Warren, Robert; Moffitt-Long Hospital of the University of California, San Francisco Medical Center; Gene Therapy of Primary and Metastatic Malignant Tumors of the Liver Using ACN53 Via Hepatic Artery Infusion: A Phase I Study. Sponsor: Sciering Plough Corporation (formerly Cniji)

RAC Approval: 12-2-94/Sole FDA Review Recommended by NIH/ORDA: 5-15-96

9412-098 (Open) Gene Therapy/Phase I/Cancer/Central Nervous System Malignancies/Pro-Drug In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intra-tumoral/Stereotactic Injection

Grossman, Robert and Woo, Savio; The Methodist Hospital, Houston, Texas; Phase I Study of Adenoviral Vector Delivery of the HSV-TK Gene and the Intravenous Administration of Ganciclovir in Adults with Malignant Tumors of the Central Nervous System.

RAC Approval: 12-2-94/NIH Approval: 2-2-96

9502-099 (Open) Gene Therapy/Phase I/Cancer/Astrocytoma/Pro-Drug In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Stereotactic Injection

Fetell, Michael; Columbia Presbyterian Medical Center, New York, New York; Wamick, Ronald; University of Cincinnati, Cincinnati, OH; Yung, W.K. Alfred; M.D. Anderson Cancer Center, Houston, Texas; Marla, Bernard L.; University of Florida, Gainesville, Florida; Shaffer, Mark; University of Virginia Health Sciences Center, Charlottesville, Virginia; Ram, Zvi; Chaim Sheba Medical Center, Tel Aviv University Sackler School of Medicine, Tel Hashomer, Israel; Prados, Michael; University of California, San Francisco, California; and Grossman, Stuart; Johns Hopkins University Hospital Oncology Center; Baltimore, Maryland; Stereotactic Injection of Herpes Simplex Thymidine Kinase Vector Producer Cells (PA317/G17KSV-Na.2) and Intravenous Ganciclovir for the Treatment of Recurrent Malignant Glioma. Sponsor: Genetic Therapy, Inc./Novartis

NIH/ORDA Approval: 2-10-95 (Accelerated Review)

9503-100 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Pro-Drug In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intraperitoneal/Catheter

Link, Charles; Human Gene Therapy Research Institute, and Moorman, Donald; Iowa Methodist Medical Center, Des Moines, Iowa; A Phase I Trial of In Vivo Gene Therapy with Herpes Simplex Thymidine Kinase/Ganciclovir System for the Treatment of Refractory or Recurrent Ovarian Cancer. RAC Approval: 3-6-95/NIH Approval: 7-27-95

9503-101 (Closed) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy In Vivo/Allogeneic Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Interleukin-7 cDNA/Hygromycin Phosphotransferase/Herpes Simplex Virus Thymidine Kinase cDNA/Subcutaneous Injection

Economou, James; Glaspy, John; and McBride, William; University of California, Los Angeles, California; A Phase I Testing of Genetically Engineered Interleukin-7 Melanoma Vaccines.

RAC Approval: 3-6-95/NIH Approval: 8-20-95

Closed: 3-97

180  
9503-102 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vitro/HLA-Matched Allogeneic Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Interleukin-2 cDNA/Gamma Interferon  
cDNA/Subcutaneous Injection

Gansbacher, Bernd; Memorial Sloan Kettering Cancer Center, New York, New York; Phase III Study of Immunization with MHC Class I Matched  
Allogeneic Human Prostatic Carcinoma Cells Engineered to Secrete Interleukin-2 and Interferon- $\gamma$

RAC Approval: 3-8-95/Sole FDA Review Recommended by NIH/ORDA: 5-14-95

101  
9503-103 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/Antisense  
In Vitro/Antisense TAR/Transdominant Rev/Intravenous

Morgan, Richard and Walker, Robert; National Institutes of Health, Bethesda, Maryland; Gene Therapy for AIDS using Retroviral Mediated Gene  
Transfer to deliver HIV-1 Antisense TAR and Transdominant Rev Protein Genes to Syngeneic Lymphocytes in HIV Infected Identical Twins.

RAC Approval: 3-7-95/NIH Approval: 4-1-95

102  
9503-104 (Open) Gene Therapy/Phase I/Monogenic Disease/Chronic Granulomatous Disease  
In Vitro/G-CSF Mobilized CD34+ Autologous Peripheral Blood Cells/Retrovirus/sp47phox/Intravenous

Melech, Harry; National Institutes of Health, Bethesda, Maryland; Gene Therapy Approach for Chronic Granulomatous Disease.

RAC Approval: 3-7-95/NIH Approval: 4-15-95

103  
9503-105 (Open) Gene Therapy/Phase II/Infectious Disease/Human Immunodeficiency Virus/Immunotherapy  
In Vivo/Autologous Muscle Cells/Retrovirus/HIV-1IIIIB Envelope Protein/Intramuscular Injection

Parent, David; George Washington University Medical Center, Washington, D.C.; Haubrich, Richard; University of California San Diego Treatment  
Center, San Diego, California; Frame, Peter; University of Cincinnati AIDS Treatment Center, Cincinnati, Ohio; Powderly, William; Washington University  
AIDS Clinical Trials Unit, St. Louis, Missouri; and Loveless, Mark; Oregon Health Sciences University, Portland, Oregon; A Repeat Dose Safety and  
Efficacy Study of HIV-1(TV) in HIV-1 Infected Subjects with Greater Than or Equal to 100 CD4+ T Cells and No AIDS Defining Symptoms.

NIH/ORDA Approval: 3-11-95 (Accelerated Review)

104  
9508-106 (Open) Gene Marking/Cancer/Chronic Myelogenous Leukemia

In Vitro/Autologous G-CSF and ATA-C Mobilized Bone Marrow Cells/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Verfaillie, Catherine; University of Minnesota, Minneapolis, Minnesota; Autologous Marrow Transplantation for Chronic Myelogenous Leukemia Using  
Stem Cells Obtained After In Vivo Chemotherapy Cytokine Priming.

NIH/ORDA Approval: 5-5-95

105  
9508-107 (Open) Gene Therapy/Phase I/Cancer/Multiple Myeloma/Pro-Drug  
In Vitro/Allogeneic T Lymphocytes/Retrovirus/Herpes Simplex Thymidine Kinase/Ganciclovir/Intravenous

Munshi, Nikhil C. and Barlogie, Bart; University of Arkansas for Medical Sciences, Little Rock, Arkansas; Thymidine Kinase (TK) Transduced Donor  
Leukocyte Infusions as a Treatment for Patients with Relapsed or Persistent Multiple Myeloma after T-cell Depleted Allogeneic Bone Marrow Transplant.  
Sponsor: Genetic Therapy, Inc./Novartis

RAC Approval: 6-9-95/NIH Approval: 7-27-95

106  
9508-108 (Open) Gene Therapy/Phase I/Cancer/Renal Cell/Melanoma/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/DMRIE-DOPE Vical VCL-1005/HLA-B7/Bete-2 Microglobulin  
cDNA/Subcutaneous Injection

Fox, Bernard A. and Urba, Walter J.; Earle A. Childs Research Institute, Providence Medical Center, Portland, Oregon; Adoptive Cellular Therapy of  
Cancer Combining Direct HA-B7/ $\beta$ -2 Microglobulin Gene Transfer with Autologous Tumor Vaccination for the Generation of Vaccine-Primed Anti-CD3  
Activated Lymphocytes.

RAC Approval: 5-9-95/NIH Approval: 9-30-95

9508-109 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Immunotherapy  
In Vitro/Anti-CD3 Stimulated Autologous Peripheral Blood Lymphocytes/Retrovirus/Antibody/MoV-gamma (Reactive with Folate Binding Protein)/Intravenous/Intraperitoneal

Hwu, Patrick, National Institutes of Health, Bethesda, Maryland; *Treatment of Patients with Advanced Epithelial Ovarian Cancer using Anti-CD3 Stimulated Peripheral Blood Lymphocytes Transduced with a Gene Encoding a Chimeric T-cell Receptor Reactive with Folate Binding Protein.*

RAC Approval: 5-9-95/Sole FDA Review Recommended by NIH/ORDA: 5-14-96

9508-110 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Immunotherapy  
In Vitro/Autologous Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/DDAB-DOPE/Cytokine/Interleukin-2 cDNA/Intracervical Injection

Berchuck, Andres and Lyerly, H. Kim, Duke University Medical Center, Durham, North Carolina; *A Phase I Study of Autologous Human Interleukin-2 (IL-2) Gene Modified Tumor Cells in Patients with Refractory Metastatic Ovarian Cancer.*

RAC Approval: 6-10-95/NIH Approval: 9-30-95

9508-111 (Open) Gene Therapy/Phase I/Monogenic Disease/Purine Nucleoside Phosphorylase Deficiency  
In Vitro/Autologous Peripheral Blood Lymphocytes/Retrovirus/Purine Nucleoside Phosphorylase cDNA/Intravenous

Mclvor, R. Scott, Institute of Human Genetics, University of Minnesota, Minneapolis, Minnesota; *Gene Therapy for Purine Nucleoside Phosphorylase Deficiency.*

RAC Approval: 5-9-95/NIH Approval: 7-27-95

9508-112 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/Single Chain Antibody Gene/In Vitro/CD4+ Autologous Peripheral Blood Lymphocytes/Retrovirus/gFv105 Anti-HIV-1 Envelope Protein(gp160)Gene/Intravenous

Marasco, Wayne A.; Dana Farber Cancer Institute, Boston, Massachusetts; *Intracellular Antibodies Against HIV-1 Envelope Protein for AIDS Gene Therapy.*

RAC Approval: 8-9-95/NIH Approval: 7-27-95

9504-113 (Closed) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus-1/Immunotherapy  
In Vivo/Autologous Muscle Cells/Retrovirus/HIV-1IIIB Envelope Protein/Intramuscular Injection

Conant, Marcus, Conant Medical Group, Lang, William, ViRx, Inc., and Meritt, James, Viagene, Inc., San Francisco, California; *A Randomized, Double Blinded Phase III Dosing Study to Evaluate the Safety and Optimal CTL Inducing Dose of HIV-1T(V) In Pre-Selected HIV-1 Infected Subjects.*

RAC Approval: NA/NIH Approval: NA (Non-NIH funded institution)  
FDA Approval: 5-6-94

9507-114 (Open) Gene Therapy/Phase I/II/Monogenic Disease/Cystic Fibrosis  
In Vivo/Maxillary Sinus Epithelial Cells/Adeno-Associated Virus/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Maxillary Sinus Administration

Gardner, Phyllis, Stanford University School of Medicine, Stanford, California; *A Phase I/II Study of tg-CP for the Treatment of Chronic Sinusitis in Patients with Cystic Fibrosis.* Sponsor: Targeted Genetics Corporation

Sole FDA Review Recommended by NIH/ORDA: 7-11-95

9508-115 (Open) Gene Therapy/Phase I/Cancer/Metastatic Malignancies/Breast Adenocarcinoma, Renal Cell Carcinoma, Melanoma, Colorectal Adenocarcinoma, non-Hodgkin's Lymphoma/Immunotherapy  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Viral VCL 1025/HLA-B7/Beta-2 Microglobulin cDNA/Direct Intratumoral Injection

Cheng, Alfred E., University of Michigan Medical Center, Ann Arbor, Michigan; Hersh, Evan, Arizona Cancer Center, Tucson, Arizona; Vogeizang, Nicholas, University of Chicago Medical Center, Chicago, Illinois; Levy, Ronald, Stanford University Medical Center, Palo Alto, California; Redman, Bruce, Wayne State University School of Medicine, Detroit, Michigan; Figlin, Robert, University of California Medical Center, Los Angeles, California;

Rubin, Joseph; Mayo Foundation for Medical Evaluation and Research, Rochester, Minnesota; Rinenart, John J.; Scott and White Hospital, Texas A & M University, Temple Texas; Doroshow, James H.; City of Hope National Medical Center, Duarte, California; Kissa, Richard; British Columbia Cancer Agency, Vancouver, British Columbia; Sobol, Robert; Sidney Kimmel Cancer Center, San Diego, California; *Phase II Study of Immunotherapy of Metastatic Cancer by Direct Gene Transfer*. Sponsor: Vical, Incorporated

Sole FDA Review Recommended by NIH/ORDA: 8-2-95

9508-116 (Open) Gene Therapy/Phase I/Cancer/Glioma/Immunotherapy  
In Vivo/Autologous Tumor (Glioma) Cells/Non-Irradiated/Retrovirus/Cytokine/Interleukin-4 cDNA/Subcutaneous Injection

Borik, Michael; Gilbert, Mark; and Lotze, Michael T.; University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania; *Gene Therapy of Malignant Gliomas: A Phase I Study of IL-4 Gene-Modified Autologous Tumor to Elicit an Immune Response*.

Sole FDA Review Recommended by NIH/ORDA: 8-7-95

9508-117 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus-1/Replication Inhibition  
In Vivo/Autologous CD34+ Peripheral Blood Cells/Retrovirus/Hammerhead Ribozyme/Intravenous

Mitsuyasu, Ronald; University of California Los Angeles, California; *A Phase I Trial of Autologous CD34+ Hematopoietic Progenitor Cells Transduced with an Anti-HIV-1 Ribozyme*.

Sole FDA Review Recommended by NIH/ORDA: 8-7-95

9508-118 (Open) Gene Therapy/Phase I/Other/Restenosis  
In Vivo/Vascular Endothelial Cells/Plasmid DNA/Vascular Endothelial Growth Factor cDNA/Intraarterial/Angioplasty Catheter/Hydrogel Coated Balloon

Isner, Jeffrey M.; St. Elizabeth's Medical Center, Tufts University School of Medicine, Boston, Massachusetts; *Accelerated Re-endothelialization and Reduced Neointimal Thickening Following Catheter Transfer of phVEGF165*.

Sole FDA Review Recommended by NIH/ORDA: 8-7-95

9508-119 (Open) Gene Therapy/Phase I/Human Immunodeficiency Virus-1  
In Vivo/CD8+ Allogeneic Cytotoxic T Lymphocytes/CD8+ Syngeneic Cytotoxic T Lymphocytes/Retrovirus/Neomycin  
Phosphotransferase/Herpes Simplex Virus Thymidine Kinase cDNA/Retrovirus/Intravenous

Riddell, Stanley R.; Fred Hutchinson Cancer Research Center, Seattle, Washington; *Phase I Study to Evaluate the Safety of Cellular Adoptive Immunotherapy using Autologous Unmodified and Genetically Modified CD8+ HIV-Specific T Cells in HIV Seropositive individuals*. Sponsor: Targeted Genetics Corporation

Sole FDA Review Recommended by NIH/ORDA: 8-7-95

9508-120 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vivo/Autologous Tumor Cells/Used to Derive Tumor Infiltrating Lymphocytes/HLA-B7 cDNA/Intravenous

Chang, Alfred E. and Nabel, Gary J.; University of Michigan Medical Center, Ann Arbor, Michigan; *Phase I Study of Tumor-Infiltrating Lymphocytes Derived from In Vivo HLA-B7 Gene Modified Tumors in the Adoptive Immunotherapy of Melanoma*.

Sole FDA Review Recommended by NIH/ORDA: 8-14-95

9508-121 (Open) Gene Therapy/Phase I/Cancer/Renal Cell/Immunotherapy  
In Vivo/Autologous Tumor Cells/HLA B7 cDNA/Intratumoral/Concurrent Interleukin-2 Therapy

Figlin, Robert A.; University of California Los Angeles Medical Center, Los Angeles, California; *Phase I Study of HLA-B7 Plasmid DNA/dMRE/DCPE Lipid Complex as an Immunotherapeutic Agent in Renal Cell Carcinoma by Direct Gene Transfer with Concurrent Low Dose Bolus IL-2 Protein Therapy*. Sponsor: Vical, Incorporated

Sole FDA Review Recommended by NIH/ORDA: 8-14-95

9508-122 (Open) Gene Therapy/Phase I/Cancer/CEA-Expressing Malignancies (type of cancer not specified)/Immunotherapy  
In Vivo/Autologous Muscle Cells/Canarypox Virus/Carcinoembryonic Antigen cDNA/Intramuscular Injection

Hawkins, Michael J. and Marshall, John L.; Georgetown University Medical Center, Washington, D.C.; *A Study of Recombinant ALVAC Virus that Expresses Carcinoembryonic Antigen in Patients with Advanced Cancers.*

Sole FDA Review Recommended by NIH/ORDA: 8-14-95

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**9509-123 (Open) Gene Therapy/Phase I/Cancer/Prostate/Antisense  
In Vivo/Autologous Tumor Cells/Retrovirus/Antisense c-myc RNA/Intraprostate Injection**

Slainer, Mitchell S., National Research Center at Vanderbilt University Medical Center, Nashville, Tennessee; and Holt, Jeffrey T., Vanderbilt University School of Medicine, Nashville, Tennessee; *Gene Therapy for the Treatment of Advanced Prostate Cancer by In Vivo Transduction with Prostate-Targeted Retroviral Vectors Expressing Antisense c-myc RNA.*

RAC Approval: 9-11-95/NIH Approval: 9-30-95

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**9509-124 (Open) Gene Therapy/Phase I/Cancer/Ovarian and Extraovarian/Anti-erbB-2 Single Chain Antibody Gene  
In Vivo/Autologous Tumor Cells/Adenovirus/Anti-erbB-2 (oncoprotein/extracellular domain) Single-chain Antibody Gene/Intraperitoneal Injection**

Curiel, David T. and Alvarez, Ronald D.; University of Alabama at Birmingham, Birmingham, Alabama; *A Phase I Study of Recombinant Adenovirus Vector-Mediated Delivery of an Anti-erbB-2 Single Chain (sFc) Antibody Gene for Previously Treated Ovarian and Extraovarian Cancer Patients.*

RAC Approval: 9-11-95/Sole FDA Review Recommended by NIH/ORDA: 5-15-96

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**9509-125 (Open) Gene Therapy/Phase I/Cancer/Colon Carcinoma (Hepatic Metastases)/Pro-Drug  
In Vivo/Autologous Tumor Cells/Adenovirus/E. coli Cytosine Deaminase cDNA/Intratumoral (Hepatic) Injection/Combined with Oral 5-Fluorocytosine**

Crystal, Ronald G.; Hershowitz, Edward; and Lieberman, Michael; New York Hospital-Cornell Medical Center, New York, New York; *A Phase I Study of Direct Administration of a Replication-Deficient Adenovirus Vector Containing the E. coli Cytosine Deaminase Gene to Metastatic Colon Carcinoma of the Liver in Association with the Oral Administration of the Pro-Drug 5-Fluorocytosine.*

RAC Approval: 9-11-95/NIH Approval: 9-30-95

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**9509-126 (Open) Gene Therapy/Phase I/Cancer/Prostate Adenocarcinoma/Immunotherapy  
In Vivo/Vaccination/Vaccinia Virus/Prostate Specific Antigen/Intradermal Injection**

Chen, A.P.; National Naval Medical Center, Bethesda, Maryland; *A Phase I Study of Recombinant Vaccinia that Expresses Prostate Specific Antigen in Adult Patients with Adenocarcinoma of the Prostate.*

Sole FDA Review Recommended by NIH/ORDA: 9-22-95

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**9509-127 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis  
In Vivo/Nasal Epithelial Cells/Cationic Liposome Complex/DOPE/Cystic Fibrosis Transmembrane Conductance Regulator cDNA; Intranasal Administration**

Wetsh, Michael J. and Zabner, Joseph; Howard Hughes Medical Institute, University of Iowa College of Medicine, Iowa City, Iowa; *Cationic Lipid Mediated Gene Transfer of CFTR: Safety of a Single Administration to the Nasal Epithelia.* Sponsor: Genzyme Corporation

Sole FDA Review Recommended by NIH/ORDA: 9-26-95

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**9510-128 (Open) Gene Therapy/Phase I/Cancer/Gastrointestinal Tract, Breast, or Lung Adenocarcinoma (CEA-Expressing Malignancies)/Immunotherapy/In Vivo/Vaccination/Vaccinia Virus/Carcinoembryonic Antigen/Intradermal Injection In Combination with Subcutaneous Peptide Challenge**

Cole, David J.; Medical University of South Carolina, Charleston, South Carolina; *Phase I Study of Recombinant CEA Vaccinia Virus Vaccine with Post Vaccination CEA Peptide Challenge.*

Sole FDA Review Recommended by NIH/ORDA: 10-16-95

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**9510-129 (Open) Gene Marking/Cancer/EBV-Positive Hodgkin Disease**

**In Vitro/EBV-Specific Cytotoxic T Lymphocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant**

128 Roskrow, Marie; Hudson, Melissa; Rooney, Cliona; Heslop, Helen; and Brenner, Malcolm; St. Jude Children's Research Hospital, Memphis, Tennessee; *Administration of Neomycin Resistance Gene Marked EBV Specific Cytotoxic T Lymphocytes as Therapy for Patients Receiving a Bone Marrow Transplant for Relapsed EBV Positive Hodgkin Disease.*

Sole FDA Review Recommended by NIH/ORDA: 10-17-95

**9510-130 (Open) Gene Marking/Cancer/EBV-Positive Hodgkin Disease**

129 **In Vitro/EBV-Specific Cytotoxic T Lymphocytes/Retrovirus/Neomycin Phosphotransferase cDNA/Intravenous Administration**

Roskrow, Marie; Hudson, Melissa; Rooney, Cliona; Heslop, Helen; and Brenner, Malcolm; St. Jude Children's Research Hospital, Memphis, Tennessee; *Administration of Neomycin Resistance Gene Marked EBV Specific Cytotoxic T Lymphocytes to Patients with Relapsed EBV-Positive Hodgkin Disease.*

Sole FDA Review Recommended by NIH/ORDA: 10-17-95

**9510-131 (Closed) Gene Therapy/Phase II/Infectious Disease/Human Immunodeficiency Virus**

130 **In Vitro/Autologous CD8+ T Cells/Retrovirus/CD4-Zeta Chimeric Receptor/Intravenous**

Connick, Elizabeth; University of Colorado Health Sciences Center, Denver, Colorado; and Deeks, Steven G.; University of California, San Francisco General Hospital, San Francisco, California; *A Randomized, Controlled, Phase II Study of the Activity and Safety of Autologous CD4-Zeta Gene-Modified T Cells in HIV-Infected Patients.* Sponsor: Cell Genesys, Inc.

Sole FDA Review Recommended by NIH/ORDA: 10-17-95

Closed 8-8-97 (No longer enrolling patients)

**9510-132 (Open) Gene Therapy/Phase I/Cancer/Locally Advanced or Metastatic Prostate/Immunotherapy**

131 **In Vitro/Autologous Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/Cytokine/Interleukin-2 cDNA/Intradermal Injection**

Paulson, David; and Lyerly, H. Kim; Duke University Medical Center, Durham, North Carolina; *A Phase I Study of Autologous Human Interleukin-2 (IL-2) Gene Modified Tumor Cells in Patients with Locally Advanced or Metastatic Prostate Cancer.*

Sole FDA Review Recommended by NIH/ORDA: 10-19-95

**9511-133 (Open) Gene Therapy/Phase I/Cancer/Neuroblastoma/Immunotherapy**

132 **In Vitro/Autologous Tumor Cells (Non-Irradiated)/Type 5 Adenovirus/Cytokine/Interleukin-2 cDNA/Subcutaneous Injection**

Brenner, Malcolm K.; Dillko, Dagmar; and Bowman, Laura; St. Jude Children's Research Hospital, Memphis, Tennessee; *Phase I Study of Cytokine Gene Modified Autologous Neuroblastoma Cells for Treatment of Relapsed/Refractory Neuroblastoma Using an Adenoviral Vector.*

Sole FDA Review Recommended by NIH/ORDA: 11-1-95

**9511-134 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition**

133 **In Vitro/Autologous CD4+ T Cells/Retrovirus/Neomycin Phosphotransferase Gene/PolyTAR Deoxy Gene/RRE-polyTAR Deoxy Gene**

Greenberg, Philip D.; Fred Hutchinson Cancer Research Center, University of Washington Medical Center, Seattle, Washington; *Phase I Study to Evaluate the Safety and In Vivo Persistence of Adoptively Transferred Autologous CD4+ T Cells Genetically Modified to Resist HIV Replication.*

Sole FDA Review Recommended by NIH/ORDA: 11-1-95

**9511-135 (Open) Gene Therapy/Phase I/Cancer/Ovarian and Extravaginal Cancer/Single Chain Antibody**

134 **In Vitro/Autologous Tumor Cells/Adenovirus/Herpes Simplex Thymidine Kinase Gene/Intraperitoneal Injection/Combined with Intravenous Ganciclovir Administration**

Alvarez, Ronald D. and Curiel, David T.; University of Alabama Comprehensive Cancer Center, Birmingham, Alabama; *A Phase I Study of Recombinant Adenovirus Vector-Mediated Intraperitoneal Delivery of Herpes Simplex Virus Thymidine Kinase (HSV-TK) Gene and Intravenous Ganciclovir for Previously Treated Ovarian and Extravaginal Cancer Patients.*

Sole FDA Review Recommended by NIH/ORDA: 11-1-95

**9511-138 (Open) Gene Therapy/Phase I/Cancer/Metastatic Melanoma/Immunotherapy In Vitro/Autologous CD8+ Tyrosinase-Specific**

135

T Cells/Retrovirus/Mybromycin Phosphotransferase/Intravenous Administration

Yee, Cassian and Greenberg, Philip D.; Fred Hutchinson Cancer Research Center, University of Washington Medical Center, Seattle, Washington; *Phase I Study to Evaluate the Safety of Cellular Adoptive Immunotherapy Using Autologous Unmodified and Genetically Modified CD8+ Tyrosinase-Specific T Cells in Patients with Metastatic Melanoma.*

Sole FDA Review Recommended by NIH/ORDA: 11-1-95

9512-137 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Breast/Oncogene Regulation/HER-2/neu  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DC-Chol-DOPE/E1A/Intraperitoneal, Intrapleural Administration

Hortobagyi, Gabriel N.; Lopez-Berstein, Gabriel; and Hung, Mien-Chien; MD Anderson Cancer Center, Houston, Texas; Kilbom, Robert. Rush-Presbyterian/St. Luke's Medical Center, Chicago, Illinois; Weiden, Paul, Virginia Mason Medical Center, Seattle, Washington; *Phase I Study of E1A Gene Therapy for Patients with Metastatic Breast or Ovarian Cancer that Overexpresses Her-2/neu.* Sponsor: Targeted Genetics Corporation

RAC Approval: 12-4-95/NIH Approval: 2-2-96

9512-138 (Open) Gene Therapy/Phase I/Cancer/Malignant Glioma/Antisense  
In Vivo/Autologous Tumor Cells/Locally Irradiated/Plasmid DNA-Electroporation/TGF- $\beta$ 2/Subcutaneous Injection

Back, Keith L.; and Fakhrai, Habib; University of California, Los Angeles, School of Medicine, Los Angeles, California; *A Phase I Study of the Safety of Injecting Malignant Glioma Patients with Irradiated TGF- $\beta$ 2 Antisense Gene Modified Autologous Tumor Cells.*

RAC Approval: 12-4-95/NIH Approval: 4-2-96

9512-139 (Open) Gene Therapy/Phase I/Monogenic Disease/Partial Ornithine Transcarbamylase (OTC) Deficiency  
In Vivo/Autologous Peripheral Blood Cells/Adenovirus/Type 5 (E2a Temperature-Sensitive Mutant)/Ornithine Transcarbamylase cDNA/Intravenous

Balshaw, Mark; Institute for Human Gene Therapy, University of Pennsylvania Medical Center, Philadelphia, Pennsylvania; *A Phase I Study of Adenoviral Vector Mediated Gene Transfer to Liver in Adults with Partial Ornithine Transcarbamylase Deficiency.*

RAC Approval: 12-4-95/Sole FDA Review Recommended by NIH/ORDA: 5-14-96

9512-140 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy  
In Vivo/Adenovirus/Type 2/MART-1 Melanoma Antigen/Subcutaneous Injection/Immunization

Rosenberg, Steven A.; National Institutes of Health, Bethesda, Maryland; *Phase I Trial in Patients with Metastatic Melanoma of Immunization with a Recombinant Adenovirus Encoding the MART-1 Melanoma Antigen.*

Sole FDA Review Recommended by NIH/ORDA: 12-1-95

9512-141 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus-1/Replication Inhibition  
In Vivo/Autologous CD4+ Peripheral Blood Lymphocytes/Retrovirus/Anti-Rev SFV/Intravenous

Pomerantz, Roger J.; Jefferson Medical College, Thomas Jefferson University, Philadelphia, Pennsylvania; *Intracellular Immunization Against HIV-1 Infection Using an Anti-Rev Single Chain Variable Fragment (SFV).*

Sole FDA Review Recommended by NIH/ORDA: 12-13-95

9512-142 (Open) Gene Therapy/Phase I/Gene Therapy/Cancer/Head and Neck Squamous Cell Carcinoma/Immunotherapy  
In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Viral VCL 1005/HLA-B\*7/Beta-2 Microglobulin cDNA/Direct Intratumoral Injection

Gluckman, Jack L.; University of Cincinnati Medical Center, Cincinnati, Ohio; *Alloectin-7 In the Treatment of Squamous Cell Carcinoma of the Head and Neck.*

Sole FDA Review Recommended by NIH/ORDA: 12-15-95

9501-143 (Open) Gene Therapy/Phase I/Cancer/Breast/Chemoprotection  
In Vivo/Autologous CD34+ Peripheral Blood Lymphocytes/Retrovirus/Multi-Drug Resistance-1 cDNA/Neomycin Phosphotransferase

## cDNA/Intravenous

Cowen, Kenneth H.; National Institutes of Health, Bethesda, Maryland; *Antimetabolite Induction, High-Dose Alkylating Agent Consolidation, and Retroviral Transduction of the MDR1 Gene Into Peripheral Blood Progenitor Cells Followed by Intensification Therapy with Sequential Flutaxel and Doxorubicin for Stage 4 Breast Cancer.*

Sole FDA Review Recommended by NIH/ORDA: 1-26-96

143 9601-144 (Open) Gene Therapy/Phase I/Cancer/Prostate/Pro-Drug  
In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Intra-  
prostatic Tumor Injection

Sordano, Peter T.; Thompson, Timothy C., and Woo, Savio L.C.; Baylor College of Medicine, Houston, Texas; *Phase I Study of Adenoviral Vector Delivery of the HSV-tk Gene and the Intravenous Administration of Ganciclovir in Men with Local Recurrence of Prostate Cancer after Radiation Therapy.*

Sole FDA Review Recommended by NIH/ORDA: 1-29-96

144 9601-145 (Closed) Gene Therapy/Phase I/Cancer/Bladder/Tumor Suppressor Gene  
In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Retinoblastoma cDNA/Intravesical Catheter Administration

Small, Eric J. and Camoli, Peter R.; University of California, San Francisco, California; *Gene Therapy of Bladder Cancer Using Recombinant Adenovirus Containing the Retinoblastoma Gene (ACNRB): A Phase IA Study.* Sponsor: Schering Plough Corporation (formerly Cargil)

Sole FDA Review Recommended by NIH/ORDA: 1-30-96  
Cancelled: 4-4-97

145 9602-146 (Open) Gene Therapy/Phase I/Cancer/Hematologic Malignancies Following Allogeneic Bone Marrow Transplant/Pro-  
Drug/Elimination of Graft Versus Host Disease  
In Vitro/Allogeneic Peripheral Blood Lymphocytes/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intravenous

Link, Charles J.; Human Gene Therapy Research Institute, Des Moines, Iowa; Burt, Richard K. and Traynor, Ann; Northwestern University School of Medicine, Chicago, Illinois; *Adoptive Immunotherapy for Leukemia: Donor Lymphocytes Transduced with the Herpes Simplex Thymidine Kinase Gene for Remission Induction.*

Sole FDA Review Recommended by NIH/ORDA: 2-8-96

146 9602-147 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/Antisense  
In Vitro/CD34+ Autologous Bone Marrow Cells/Retrovirus/RRE Decoy Gene, and Retrovirus/Neomycin Phosphotransferase Gene/Intravenous

Kohn, Donald B.; Childrens Hospital Los Angeles, Los Angeles, California; *Transduction of CD34+ Cells from the Bone Marrow of HIV-1 Infected Children: Comparative Marking by end RRE Decoy.*

Sole FDA Review Recommended by NIH/ORDA: 2-8-96

147 9602-148 (Open) Gene Therapy/Phase I/Cancer/Head and Neck/Squamous Cell Carcinoma/Pro-Drug  
In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral Injection

O'Malley, Bert W.; Johns Hopkins University, Baltimore, Maryland; *Phase I Study of Adenoviral Vector Delivery of the HSV-tk Gene and the Intravenous Administration of Ganciclovir in Adults with Recurrent or Persistent Head and Neck Cancer.*

Sole FDA Review Recommended by NIH/ORDA: 2-13-96

148 9603-149 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Tumor Suppressor Gene

In Vivo/Autologous Tumor Cells/Retrovirus/BRCA-1 Gene/Intraperitoneal Administration (Ultrasound Guided)  
Hoff, Jeffrey T.; Clinical Research Center at Vanderbilt University Medical Center, Nashville, Tennessee; *Ovarian Cancer Gene Therapy with BRCA-1*

Sole FDA Review Recommended by NIH/ORDA: 3-8-96

149 9603-150 (Closed) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy In Vivo/Autologous Tumor Cells/HLA B7

cDNA/Intratumoral/Concurrent Interleukin-2 Therapy

Hersh, Evan M., Arizona Cancer Center, Tucson, Arizona; and Sondak, Vernon K., University of Michigan Medical Center, Ann Arbor, Michigan; *Evaluation of Intratumoral Gene Therapy with HLA-B7/DMRIE/DOPE plus Subcutaneous Low Dose IL-2*.  
Sole FDA Review Recommended by NIH/ORDA: 3-26-96

Closed: 3-11-97. Protocol Never Initiated

156 9604-151 (Open) Gene Therapy/Phase V Cancer/Melanoma/Immunotherapy In Vivo/Autologous Tumor Cells/Adenovirus/Sarotype 2/GP100 Melanoma Antigen/Subcutaneous or Intramuscular Injection/Concurrent Interleukin-2 Therapy

Rosenberg, Steven A. National Institutes of Health, Bethesda, Maryland; *Phase I Trial in Patients with Metastatic Melanoma of Immunization with a Recombinant Adenovirus Encoding the GP100 Melanoma Antigen*.

Sole FDA Review Recommended by NIH/ORDA: 4-19-96

151 9604-152 (Open) Gene Therapy/Phase V/Inherited Genetic Disorder/Monogenic Disease/X-Linked Severe Combined Immune Deficiency/Correction In Vitro/CD34+ Autologous Umbilical Cord Blood or Bone Marrow/Retrovirus/cDNA for Common  $\gamma$  Chain of Multiple Cytokine Receptors/Intravenous

Weinberg, Kenneth I., Childrens Hospital Los Angeles (CHLA), Los Angeles, California; *Gene Therapy for X-linked Severe Combined Immune Deficiency using Retroviral Mediated Transduction of the  $\gamma$  cDNA into CD34+ Cells*.

Sole FDA Review Recommended by NIH/ORDA: 4-24-96

152 9604-153 (Open) Gene Therapy/Phase V/Infectious Disease/Human immunodeficiency Virus/Replication Inhibition/Hammerhead Ribozyme/In Vitro/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Tat and Rev Hammerhead Ribozyme/Intravenous

Kohn, Donald B., Childrens Hospital of Los Angeles (CHLA), Los Angeles, California; and Zaia, John A., City of Hope National Medical Center, Duarte, California; *Transduction of CD34+ Autologous Peripheral Blood Progenitor Cells from HIV-1 Infected Persons: a Phase I Study of Comparative Marking Using a Ribozyme Gene and a Neutral Gene*.

Sole FDA Review Recommended by NIH/ORDA: 4-24-96

153 9605-154 (Open) Gene Therapy/Phase V/Cancer/Brain Tumors/Pro-Drug/In Vivo/Autologous Tumor Cells/psiCRIP-MFG-S-TK1-67 Cells/Retrovirus/Herpes Simplex Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Direct Injection

Harsh IV, Griffith R., Chiocca, E. Antonio; Hochberg, Fred H.; Harvard Medical School, Boston, Massachusetts; *Phase I Study of Retrovirus-Mediated Incorporation of the HSV Thymidine Kinase Gene and Ganciclovir in Malignant Gliomas*.

Sole FDA Review Recommended by NIH/ORDA: 5-1-96

154 9605-155 (Open) Gene Therapy/Phase V/Cancer/Ovarian/Pro-Drug/Immunotherapy/In Vitro/Allogeneic Tumor Cells/Cationic Liposome Complex/B7(CD80) cDNA/Retrovirus/Herpes Simplex Thymidine Kinase/Ganciclovir/Intraperitoneal

Freeman, Scott M., and Robinson III, William R.; Tulane University School of Medicine, New Orleans, Louisiana; *Tumor Vaccination With HER-2/Neu Using a B7 Expressing Tumor Cell Line Prior To Treatment With HSV-TK Gene-Modified Cells*.

Sole FDA Review Recommended by NIH/ORDA: 5-2-96

155 9606-156 (Open) Gene Therapy/Phase I/Cancer/Breast/Immunotherapy/In Vitro/Allogeneic Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/B7(CD80) cDNA/Subcutaneous Injection

Urba, Walter J., Providence Portland Medical Center, Portland, Oregon; *Phase I Trial Using a CD80-Modified Allogeneic Breast Cancer Line to Vaccinate HLA-A2-Positive Women with Breast Cancer*.

Sole FDA Review Recommended by NIH/ORDA: 6-3-96

156 9608-157 (Open) Gene Therapy/Phase II of 95303-037/Cancer/Glioblastoma/Pro-Drug/In Vivo/Autologous Tumor Cells/Ps117/Retrovirus/Herpes Simplex Virus Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Direct Injection

Marie, Bernard, University of Florida, Gainesville, Florida; Guthrie, John, Sharp Healthcare, Sidney Kimmel Cancer Center, San Diego, California; Bucholz, Richard, St. Louis University, St. Louis, Missouri; Olson, Jeffrey, Emory School of Medicine, Winship Cancer Center, Atlanta, Georgia; Lilleha, Kevin, University of Colorado, Denver, Colorado; Van Gilder, John, University of Iowa College of Medicine, Iowa City, Iowa; Nernst, John, Texas Oncology P.A., Baylor University Medical Center, Dallas, Texas; Orsiano, Thomas, Loyola University Medical Center, Maywood, Illinois; Wernick, Ronald, University of Cincinnati Medical Center, The Christ Hospital, Good Samaritan Hospital, Jewish Hospital of Cincinnati, Veterans Affairs Medical Center, Cincinnati, Ohio; Weber, Friedrich R. med., Heinrich Heine Universität, Düsseldorf, Germany; Rainov, Nikolai, PD Dr. med., Martin Luther Universität, Halle, Germany; Cloughesy, Timothy, UCLA Department of Neurology, Reed Neurological Research Center, Boywer Oncology Clinic, Los Angeles, California; Markert, James, University of Alabama at Birmingham, Birmingham, Alabama; Mads Vespelahi, Kuopio University Hospital, Kuopio, Finland; Yasuhito Yonekawa, University Hospital, Zurich, Switzerland; Nanno Harrie Mulder, Academic Hospital Groningen, Groningen, The Netherlands; Suzanne Osanle, Academic Hospital Leiden, Leiden, The Netherlands; Fellel, Michael, Columbia-Presbyterian Medical Center, Neurological Institute, New York, New York; Schramm, Johannes, Prof. Dr. med., Univ. Klinikum Neurochirurgische Klinik, Bonn, Germany; Aestphal, Manfreid, PD Dr. med., Klinikum Eppendorf Neurochirurgie/Univ. Medizin, 52, Hamburg, Germany; Tonn, Jörg-Christian, PD Dr. med., u. Poliklinik/Univ. Klinik, Würzburg, Germany; Mounifan, Robert, Dr. Hospital Notre-Dame, Montreal, Quebec, Canada; Shaffrey, Mark, University of Virginia, Charlottesville, Virginia; Asher, Anthony, Presbyterian Hospital, Cancer Center, Charlotte, North Carolina; Epstein, Mei, Brown University, Providence, Rhode Island; Schmidt-Schackert, Frau Prof. Dr. med., Gabriele, Univ.-Klin. Kar-G. Carus, Klinik f. Neurochirurgie, Dresden, Germany; Mander, Ivar, Victoria Genera Hospital, Halifax, Nova Scotia, Canada; Bernstein, Mark, The Toronto Hospital, Toronto, Ontario, Canada; Quigley, Matthew, Allegheny University of Health Sciences, Pittsburgh, Pennsylvania; Payner, Troy, Indianapolis Surgical Group, Indianapolis, Indiana; Kulvik, Martti, Helsinki University Central Hospital, Helsinki, Finland; Seiler, Rolf W., University Hospital, Bern, Switzerland; Weiss, Martin Harvey, University of Southern California, Department of Neurosurgery, Los Angeles, California; Fick, James R., Medical College of Georgia, Department of Surgery, Augusta, Georgia; Leblanc, Richard, Montreal Neurological Institute, Montreal, Quebec, Canada; Buchfelder, Michael, Neurochirurgische Klinik mit Poliklinik der Universität Erlangen-Nürnberg, Erlangen, Germany; Broton, Jacques, Hôpital Erasme, Neurosurgery, Cliniques Universitaires de Bruxelles, Bruxelles, Belgium; Astrup, Jens, Aarhus Kommunehospital, Aarhus C, Denmark; Henniksen, Roger, University Hospital, Umeå, Sweden; MacLennan, Robert J., Vanderbilt University Medical Center, Nashville, Tennessee; Ram, Zvi, The Chaim Sheba Medical Center, Tel-Hassomer, Israel; Andrews, David, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania; Verlooy, Jan, University Hospital Antwerp, Antwerp, Belgium; Stockhammer, Günther, Universitätsklinik für Neurologie, Innsbruck, Austria; Pavot, Marie, Centre Leon Bernard, Lyon, France; and Prochazka, Gerald, Unite Neurologica Molecolare e Terapia Genica, Istituto Nazionale Neurologico Carlo Besta, Milano, Italy; Prospective, Open Label Parallel Group, Randomized Multicenter Trial Comparing the Efficacy of Surgery, Radiation, and Injection of Murine Cells Producing Herpes Simplex Thymidine Kinase Vector Followed by Intravenous Ganciclovir Against the Efficacy of Surgery and Radiation in the Treatment of Newly Diagnosed, Previously Untreated Glioblastoma. Sponsor: Genetic Therapy, Inc./Novartis

See FDA Review Recommended by NIH/ORDA: 8-22-95

157 9808-158 (Open) Gene Therapy/Phase I/IV/Cancer/Melanoma or Sarcoma/Immunotherapy/In Vitro/Autologous Tumor Cells/Lethally Irradiated/Plasmid DNA/Particle Mediated Gene Transfer (Acceils)/Cytokine/GM-CSF cDNA/Subcutaneous Injection

Nehvi, David M., University of Wisconsin Hospital and Clinics Comprehensive Cancer Center, Madison, Wisconsin; Phase I/IV Study of Immunization with Autologous Tumor Cells Transfected with the GM-CSF Gene by Particle-Mediated Transfer in Patients with Melanoma or Sarcoma

See FDA Review Recommended by NIH/ORDA: 8-26-95

158 9805-159 (Open) Gene Marking/Cancer/Pediatric Malignancies/In Vitro/CD34+ Autologous Bone Marrow and Peripheral Blood/Retrovirus/Neomycin Phosphotransferase cDNA/Bone Marrow Transplant

Heslop, Helen E.; Brenner, Malcolm K.; Krance, Robert A.; St. Jude Children's Research Hospital, Memphis, Tennessee; A Comparative Evaluation of the Utility of Hemopoietic Progenitor Cells Derived from Peripheral Blood vs Bone Marrow

See FDA Review Recommended by NIH/ORDA: 5-15-95

159 9609-160 (Open) Gene Therapy/Phase I/Cancer/Prostate Adenocarcinoma/Immunotherapy/In Vivo/Vaccination/Vaccinia Virus/Prostate Specific Antigen/Intradermal Injection

Kufe, Donald W., and Eder, Joseph Paul, Dana-Farber Cancer Institute, Boston, Massachusetts; A Phase I Trial Of Recombinant Vaccinia Virus That Expresses PSA in Patients With Adenocarcinoma Of The Prostate

See FDA Review Recommended by NIH/ORDA: 9-18-95

160 9809-161 (Closed) Gene Therapy/Phase I/Cancer/Small Cell Lung Cancer/Immunotherapy/In Vitro/Autologous Tumor Cells/Lethally Irradiated/Cationic Liposome Complex/Lipofectin/Gibco BRL/BT-1(CD80) cDNA/Subcutaneous Injection

Antonia, Scott J., H. Lee Moffitt Cancer Center, Tampa, Florida; Treatment of Small Cell Lung Cancer Patients in Partial Remission Or At Relapse With BT-1 Gene-Modified Autologous Tumor Cells As A Vaccine With Systemic Interferon Gamma

See FDA Review Recommended by NIH/ORDA: 10-10-95

Closed: 1-23-96. Protocol Never Initiated

161 9810-162 (Open) Gene Therapy/Phase I/Cancer/Solid Tumors/Oncogene Regulation/HER-2/neu/In Vivo/Autologous Tumor Cells/Cationic

**Liposome Complex/DC-Chol-DOPE/E1A Intratumoral Injection**

LaFollette, Suzanne, Rush/Presbyterian/St. Luke's Medical Center, Chicago, Illinois; Murray, James L., M.D. Anderson Cancer Center, Houston, Texas; Yoo, George, Wayne State University, Detroit, Michigan; *A Phase I Multicenter Study of Intratumoral E1A Gene Therapy for Patients with Unresectable or Metastatic Solid Tumors that Overexpress HER-2/neu*. Sponsor: Targeted Genetics Corporation

Sole FDA Review Recommended by NIH/ORDA: 10-29-98

162 9610-163 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vivo/Fowlpox Virus/MART-1 Melanoma Antigen/Intramuscular Injection

Rosenberg, Steven A., NIH, Bethesda, Maryland; *Phase I Trial In Patients With Metastatic Melanoma Of Immunization With A Recombinant Fowlpox Virus Encoding The MART-1 Melanoma Antigen*.

Sole FDA Review Recommended by NIH/ORDA: 5-23-96

163 9610-164 (Open) Gene Therapy/Phase I/Cancer/Liver(Hepatic)Metastases/Pro-Drug/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Thymidine Kinase Gene/Ganciclovir/Intratumoral Injection

Sung, Max W., and Woo, Sevia L.C., Mount Sinai Medical Center, New York, New York; *Phase I Trial of Adenoviral Vector Delivery of the Herpes Simplex Thymidine Kinase Gene by Intratumoral Injection Followed by Intravenous Ganciclovir in Patients with Hepatic Metastases*.

Sole FDA Review Recommended by NIH/ORDA: 11-12-96

164 9611-165 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vivo/Fowlpox Virus/gp100 Melanoma Antigen/Intramuscular Injection

Rosenberg, Steven A., NIH, Bethesda, Maryland; *Phase I Trial In Patients With Metastatic Melanoma Of Immunization With A Recombinant Fowlpox Virus Encoding the GP100 Melanoma Antigen*.

NIH/ORDA Receipt Date: 11-13-96. Sole FDA Review Recommended: 1-17-96

165 9611-166 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vivo/Vaccinia Virus/MART-1 Melanoma Antigen/Intramuscular Injection

Rosenberg, Steven A., NIH, Bethesda, Maryland; *Phase I Trial In Patients With Metastatic Melanoma Of Immunization With A Recombinant Vaccinia Virus Encoding the MART-1 Melanoma Antigen*.

NIH/ORDA Receipt Date: 11-13-96. Sole FDA Review Recommended: 1-17-96

166 9611-167 (Open) Gene Therapy/Phase II/Cancer/Glioblastoma/Pro-Drug/In Vivo/Autologous Tumor Cells/PA317/Retrovirus/Herpes Simplex Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Direct Injection

Marie, Bernard, et al. (All #9608-157 sites are eligible to participate in this study.) *Prospective, Open-Label, Multicenter, Extension Trial for the Treatment of Recurrent Glioblastoma Multiforme with Surgery and Injection of Murine Cells Producing Herpes Simplex Thymidine Kinase Vector Followed by Intravenous Ganciclovir for Patients with Disease Progression Following Standard Treatment on Protocol GTI-2115*. Sponsor: Genetic Therapy, Inc./Novartis

This protocol is an extension of #9608-157.

NIH/ORDA Receipt Date: 11-13-98. Sole FDA Review Recommended by NIH/ORDA: 1-8-97

167 9611-168 (Open) Gene Therapy/Phase II/Cancer/Melanoma/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Vical VCL 1005/HLA-B7/BBeta-2 Microglobulin cDNA/Direct Intratumoral Injection

Hersh, Evan M., Arizona Cancer Center, Tucson, Arizona; Kiess, Richard, British Columbia Cancer Agency, Vancouver, B.C., Canada; Gonzales, Rene, University of Colorado Cancer Center, Denver, Colorado; Silver, Gary, Northern California Melanoma Clinic, San Francisco, California; Thompson, John A., Jr., of Washington Medical Center, Seattle, Washington; *Phase II Study of Immunotherapy of Metastatic Melanoma by Direct Gene Transfer*. Sponsor: Vical, Incorporated

NIH/ORDA Receipt Date: 11-26-96. Sole FDA Review Recommended by NIH/ORDA: 1-6-97

9811-169 (Open) Gene Therapy/Phase I/Cancer/Solid Tumors/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Viral VCL 1102/Cytokine/Interleukin-2 cDNA/Direct Intratumoral Injection

168 Hersh, Evan, M., Arizona Cancer Center, Tucson, Arizona; Rinehart, John, Scott and White Clinic, Temple, Texas; Rubin, Joseph, Mayo Clinic, Rochester, Minnesota; Sondak, Vernon K., University of Michigan Medical Center, Ann Arbor, Michigan; Gonzales, Rene, University of Colorado Cancer Center, Denver, Colorado; Sobol, Robert E., Sharp HealthCare, San Diego, California; and Forscher, Charles A., Cedars-Sinai Comprehensive Cancer Center, Los Angeles, California; Phase I/II Trial of Interleukin-2 DNA/DMRIE/DOPE Lipid Complex as an Immunotherapeutic Agent in Cancer by Direct Gene Transfer. Sponsor: Viral, Incorporated

NIH/ORDA Receipt Date: 11-28-98. Sole FDA Review Recommended by NIH/ORDA: 1-17-97

9612-170 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis/In Vivo/Lung and Basal Epithelial Cells/Cationic Liposome Complex/DOPE/CFTR cDNA/Aerosol Administration

169 Sorsoher, Eric, University of Alabama, Birmingham, Medical Center; Safety and Efficiency of Gene Transfer of Aerosol Administration of a Single Dose of a Cationic Lipid/DNA Formulation to the Lungs and Nose of Patients with Cystic Fibrosis. Sponsor: Genzyme Corporation

NIH/ORDA Receipt Date: 12-17-96. Sole FDA Review Recommended by NIH/ORDA: 1-6-97

9701-171 (Open) Non-Therapeutic/In Vivo/Intradermal Cells/Adenovirus/Serotype 5/E.coli Cytosine Deaminase/Intradermal Injection

170 Harvey, Ben-Gary, and Crystal, Ronald G., Rockefeller University Hospital, New York, New York; Immune Response to Intradermal Administration of an Adenovirus Type 5 Gene Transfer Vector (Ad<sub>5</sub>CD.10) In Normal Individuals.

NIH/ORDA Receipt Date: 1-9-97. RAC Approval: 3-6-97/NIH Approval: 4-21-97

9701-172 (Open) Gene Therapy/Phase I/Cancer/Germ Cell Tumors (Testicular Cancer)/Chemoprotection/In Vitro/G-CSF Mobilized Autologous CD34+ Peripheral Blood Cells/Retrovirus/Multi-Drug Resistance-1 cDNA/Bone Marrow Transplant

171 Cornette, Kenneth, and Abonour, Rafat, Indiana University Department of Medicine, Indianapolis, Indiana; High Dose Carboplatin and Etoposide Followed by Transplantation with Peripheral Blood Stem Cells Transduced with the Multiple Drug Resistance Gene in the Treatment of Germ Cell Tumors - A Pilot Study.

NIH/ORDA Receipt Date: 1-9-97. Sole FDA Review Recommended by NIH/ORDA: 2-26-97

9701-173 (Open) Gene Therapy/Phase I/Cancer/Brain Tumors/Chemoprotection/In Vitro/Peripheral Blood CD34+ Cells/Retrovirus/O<sup>6</sup>-Methylguanine DNA Methyltransferase cDNA/Intravenous Infusion

172 Williams, David A., Indiana University School of Medicine, Indianapolis, Indiana; A Pilot Study of Dose Intensified Procarbazine, CCNU, Vincristine (PCV) for Poor Prognosis Pediatric and Adult Brain Tumors Utilizing Fibronectin-Assisted, Retroviral-Mediated Modification of CD34+ Peripheral Blood Cells with O<sup>6</sup>-Methylguanine DNA Methyltransferase.

NIH/ORDA Receipt Date: 1-13-97. Sole FDA Review Recommended by NIH/ORDA: 2-4-97

9701-174 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vitro/Allogeneic Tumor Cells/Lethally Irradiated/Retrovirus/Interleukin-2 cDNA/Neomycin Phosphotransferase cDNA/Immunisolation Device/Subcutaneous Implantation

173 Das Gupta, Tapas K., University of Illinois at Chicago, Chicago, Illinois; A Pilot Study Using Interleukin-2 Transfected Irradiated Allogeneic Melanoma Cells Encapsulated in an Immunisolation Device in Patients with Metastatic Malignant Melanoma.

NIH/ORDA Receipt Date: 1-13-97. Sole FDA Review Recommended by NIH/ORDA: 2-21-97

9701-175 (Open) Gene Therapy/Phase I/Cancer/Glioblastoma/Pro-Drug/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Thymidine Kinase cDNA/Ganciclovir/Intratumoral/Stereotactic Injection

174 Lieberman, Frank, Germano, Isabelle, and Woo, Savio, Mount Sinai Medical Center, New York, New York; Gene Therapy for Recurrent Glioblastoma Multiforme: Phase I Trial of Intraparenchymal Adenoviral Vector Delivery of the HSV-TK Gene and Intravenous Administration of Ganciclovir.

NIH/ORDA Receipt Date: 1-22-97. Sole FDA Review Recommended by NIH/ORDA: 2-12-97

175 9702-176 (Open) Gene Therapy/Phase I/Cancer/Prostate Adenocarcinoma/Immunotherapy/In Vivo/Vaccination/Vaccinia Virus/Prostate

## Specific Antigen/Intradermal Injection

Senda, Martin G., University of Michigan Urology Clinics, Ann Arbor, Michigan; *A Phase I/II Clinical Trial Evaluating the Safety and Biological Activity of Recombinant Vaccinia-PSA Vaccine in Patients with Serological Recurrence of Prostate Cancer Following Radical Prostatectomy.*

NIH/ORDA Receipt Date: 2-19-97. Sole FDA Review Recommended by NIH/ORDA: 5-13-97

172 9702-177 (Open) Gene Marking/Cancer/Chronic Myelogenous Leukemia/In Vitro/Autologous Peripheral Blood Cells Mobilized by Cyclophosphamide and G-CSF/Retrovirus/Neomycin Phosphotransferase cDNA/Autologous Bone Marrow Transplant;

Verfaillie, Catharina, McIvor, Scott, McCullough, Jeff, and McGlave, Philip, University of Minnesota, Minneapolis, Minnesota; *Autologous Marrow Transplantation for Chronic Myelogenous Leukemia Using Retrovirus Marked Peripheral Blood Progenitor Cells Obtained after In Vivo Cyclophosphamide/G-CSF Priming.*

NIH/ORDA Receipt Date: 2-21-97. Sole FDA Review Recommended by NIH/ORDA: 3-14-97

177 9703-178 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/In Vitro/CD34+ Autologous Cord Blood Cells/Retrovirus/Transdominant Trev/Intravenous

Belmont, John W., Texas Children's Hospital, Houston, Texas; *Phase I Clinical Trial of TREV Gene Therapy for Pediatric AIDS*

NIH/ORDA Receipt Date: 3-10-97. Sole FDA Review Recommended by NIH/ORDA: 3-31-97

178 9703-179 (Open) Gene Therapy/Phase I/Cancer/CEA-Expressing Malignancies/Immunotherapy/In Vitro/Autologous Dendritic Cells/RNA Transfer/Carcinoembryonic Antigen/Intravenous

Lerly, Kim H., Duke University Medical Center, Durham, North Carolina; *A Phase I Study of Active Immunotherapy With Carcinoembryonic Antigen RNA-Pulsed Autologous Human Cultured Dendritic Cells in Patients with Metastatic Malignancies Expressing Carcinoembryonic Antigen*

NIH/ORDA Receipt Date: 3-14-97. Sole FDA Review Recommended by NIH/ORDA: 6-24-97

179 9703-180 (Open) Gene Therapy/Phase I/Other/Cubital Tunnel Syndrome/In Vivo/Autologous Muscle Cells/Plasmid DNA/Polyvinylpyrrolidone (PVP)/Human Insulin-Like Growth Factor-1(hIGF-1)/Intramuscular Injection

Netscher, David, Hand Clinic at the Veteran's Affairs (VA) Medical Center, Houston, Texas; *Phase I Single Dose-Ranging Study Of Formulated hIGF-1 Plasmid in Subjects With Cubital Tunnel Syndrome.* Sponsor: Gene Medicine, Inc.

NIH/ORDA Receipt Date: 3-17-97. Sole FDA Review Recommended: 4-7-97

180 9703-181 (Open) Gene Therapy/Phase II/Infectious Disease/Human Immunodeficiency Virus/In Vitro/Autologous CD8+ and CD4+ T Lymphocytes/Retrovirus/CD4-Zeta ChimERIC Receptor/Intravenous/Concurrent Interleukin-2 Therapy

Connick, Elizabeth, University of Colorado Health Sciences Center, Denver, Colorado, Deeks, Steven G., University of California, San Francisco General Hospital, San Francisco, California, Scadden, David, Massachusetts General Hospital (East), Charlestown, Massachusetts, Mitsuyasu, Ronald, University of California, Los Angeles Medical Center, Los Angeles, California; *A Phase II Study of the Activity and Safety of Autologous CD4-Zeta Gene-Modified T Cells With or Without Exogenous Interleukin-2 in HIV Infected Patients.* Sponsor: Cell Genesys, Inc.

NIH/ORDA Receipt Date: 3-19-97. Sole FDA Review Recommended: 4-18-97

181 9703-182 (Open) Gene Therapy/Phase II/Monogenic Inherited Disorder/Cystic Fibrosis/Sinusitis/Correction/In Vivo/Maxillary Sinus Epithelial Cells/Adeno-associated Virus/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Maxillary Sinus Administration

Gardner, Phyllis, Stanford University's General Clinical Research Center (GCRC), Palo Alto, California; *A Phase III Study of gpAAVCF for the Treatment of Chronic Sinusitis With Cystic Fibrosis.* Sponsor: Targeted Genetics Corporation

NIH/ORDA Receipt Date: 3-13-97. Sole FDA Review Recommended: 4-1-97

182 9703-183 (Closed) Gene Marking/Cancer/EBV-Positive Hodgkin Disease/In Vitro/EBV-Specific Hodgkin Disease/In Vitro/EBV-Specific Cytotoxic Lymphocytes/Retrovirus/Neomycin Phosphotransferase/Bone Marrow Transplant

Sirous, Stephan E., National Institutes of Health, Bethesda, Maryland; *Administration of Neomycin Resistance Gene Marked EBV Specific Cytotoxic T-*

*Lymphocyte To Patients With Relapsed EBV-Positive Hodgkin Disease.  
Compassionate Case*

NIH/ORDA Receipt Date: 3-19-97. Sole FDA Review Recommended by NIH/ORDA: 3-25-97

Patient never treated (closed as of 11-18-97)

**9703-184 (Open) Gene Therapy/Phase I/Cancer/Prostate Cancer/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Viral VCL-1102/Cytokine/Interleukin-2 cDNA/Intratumoral Injection**

Beldegryn, Arie, University of California, Los Angeles, School of Medicine, Los Angeles, California; *A Phase I Study Evaluating the Safety and Efficacy of Interleukin-2 Gene Therapy Delivered by Lipid Mediated Gene Transfer (Leuvecin) in Prostate Cancer Patients* Sponsor: Viral, Inc.

NIH/ORDA Receipt Date: 3-24-97. Sole FDA Review Recommended by NIH/ORDA: 5-21-97

**9704-185 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vivo/Autologous Melanoma Cell/Canarypox Virus/Cytokine/Interleukin-12 cDNA/Intratumoral Injection**

Corry, Robert M., University of Alabama at Birmingham, Birmingham, Alabama; *Phase Ib Trial of Intratumoral Injection of a Recombinant Canarypox Virus Encoding the Human Interleukin-12 Gene (ALVAC-NL-12) in Patients with Surgically Incurable Melanoma* Sponsor: NCI- Cancer Therapy Evaluation Program

NIH/ORDA Receipt Date: 4-1-97. Sole FDA Review Recommended by NIH/ORDA: 7-2-97

**9704-186 (Open) Gene Therapy/Phase I/Monogenic Disease/Cystic Fibrosis/In Vivo/Nasal Epithelial Cells/Cystic Fibrosis Transmembrane Conductance Regulator cDNA/Cationic Liposome Complex/EDMPC/Intranasal Administration**

Noone, Padraig G., Knowles, Michael R., University of North Carolina at Chapel Hill, North Carolina; *A Double-Blind, Placebo Controlled, Dose Ranging Study to Evaluate the Safety and Biological Efficacy of the Lipid-DNA Complex GR213497B in the Nasal Epithelium of Adult Patients with Cystic Fibrosis*. Sponsor: Glaxo Wellcome Inc.

NIH/ORDA Receipt Date: 4-23-97. Sole FDA Review Recommended by NIH/ORDA: 5-13-97

**9705-187 (Open) Gene Therapy/Phase I/Cancer/Prostate/Pro-Drug/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Thymidine Kinase Gene/Ganciclovir/Intratumoral Injection**

Hell, Simon J., Woo, Savio L.C., Mount Sinai School of Medicine, New York, New York; *Phase I Trial of Adenovirus-Mediated Herpes Simplex Thymidine Kinase Gene Transduction in Conjunction with Ganciclovir Therapy as Neo-adjunct Treatment for Patients with Clinically Localized (Stage T1c and T2b&c) Prostate Cancer Prior to Radical Prostatectomy*.

NIH/ORDA Receipt Date: 5-7-97. Sole FDA Review Recommended by NIH/ORDA: 5-28-97

**9705-188 (Open) Gene Therapy/Phase I/Cancer/Chronic Myelogenous Leukemia/Chemoprotection/Ty-22 Murine Dihydrofolate Reductase Gene/Antisense/Anti-b3a2BCR/ABL Gene/In Vivo/Autologous Peripheral Blood CD34+ Cells Mobilized by Cyclophosphamide and G-CSF/Retrovirus/Autologous Bone Marrow Transplant**

Verfaillie, Catherine, Melvor, Scott, McCullough, Jeff, McGlave, Philip; University of Minnesota, Minneapolis, Minnesota; *Autologous Transplantation for Chronic Myelogenous Leukemia with Stem Cells Transduced with a Methotrexate Resistant DHFR and Anti-BCR/ABL Containing Vector and Post Transplant Methotrexate Administration*.

NIH/ORDA Receipt Date: 5-16-97. Sole FDA Review Recommended by NIH/ORDA: 8-6-97

**9705-189 (Open) Gene Therapy/Phase I/Cancer/Hepatocellular Carcinoma/Tumor Suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intratumoral Injection**

Beilen, Chandra P., University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; *Phase I Study of Percutaneous Injections of Adenovirus p53 Construct (Adeno-p53) for Hepatocellular Carcinoma*.

NIH/ORDA Receipt Date: 5-27-97. Sole FDA Review Recommended by NIH/ORDA: 9-19-97

**9705-190 (Open) Gene Therapy/Phase I/Cancer/Squamous Cell Carcinoma of the Head and Neck/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DOTMA-Cholesterol/Cytokine/Interleukin-2 cDNA/Intratumoral Injection**

O'Malley, Bert W., Johns Hopkins Medical Institutions, Baltimore, Maryland; *A Double-Blind, Placebo Controlled, Single Rising-Dose Study of the*

*Safety and Tolerability of Formulated hIL-2 Plasmid in Patients with Squamous Cell Carcinoma of the Head and Neck (SCCHN).* Sponsor: Gene Medicine, Inc.

NIH/ORDA Receipt Date: 5-27-97. Sole FDA Review Recommended by NIH/ORDA: 6-15-97

90 9706-191 (Open) Gene Therapy/Phase II/Cancer/Head and Neck Squamous Cell Carcinoma/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE/Viral VCL-1003/HLA-B\*7/Beta-2 Microglobulin cDNA/Direct Intratumoral Injection

Gluckman, Jack L.; Gleish, Lyon L., University of Cincinnati Medical Center, Cincinnati, Ohio; Swinehart, James M., Colorado Medical Research Center, Denver, Colorado; Hanna, Ehab, University of Arkansas for Medical Sciences/Arkansas Cancer Research Center (UAMS), Little Rock, Arkansas; Castro, Dan J., University of California, Los Angeles, Los Angeles, California; Gapan, Markus, Veterans Affairs Medical Center, Minneapolis, Minnesota; Carroll, William R., University of Alabama at Birmingham, Birmingham, Alabama; Coltrera, Marc D., University of Washington Medical Center, Seattle, Washington; Wolf, Gregory T., University of Michigan Medical Center, Ann Arbor, Michigan; and Okuno, Scott, Mayo Clinic, Rochester, Minnesota; *Phase II Study of Immunotherapy by Direct Gene Transfer with Allovectin-7 for the Treatment of Recurrent or Metastatic Squamous Cell Carcinoma of the Head and Neck* Sponsor: Viral, Inc.

NIH/ORDA Receipt Date: 6-6-97. Sole FDA Review Recommended by NIH/ORDA: 7-7-97

91 9706-192 (Open) Gene Therapy/Phase I/Cancer/Prostate/Tumor suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intratumoral Injection

Beldegrun, Arie, and Figlin, Robert, UCLA School of Medicine, Los Angeles, California; *A Phase I Study in Patients with Locally Advanced or Recurrent Adenocarcinoma of the Prostate Using SCH58500 (Ad/p53) Administered by Intratumoral Injection* Sponsor: Schering-Plough Corporation

NIH/ORDA Receipt Date: 6-9-97. Sole FDA Review Recommended by NIH/ORDA: 9-17-97

92 9706-193 (Open) Gene Therapy/Phase I/Cancer/Immunotherapy/CEA-Expressing Malignancies/In Vivo/Autologous Muscle Cells/Canarypox Virus/Vaccinia Virus/Carcinoembryonic Antigen cDNA/Intramuscular and Percutaneous Injection

Marshall, John L.; Vincent, F. Lombardi Cancer Research Center, Georgetown University Medical Center, Washington, D.C.; *A Pilot Study of Sequential Vaccinations with ALVAC-CEA and Vaccinia-CEA with the addition of IL-2 and GM-CSF in Patients with CEA Expressing Tumors* Sponsor: National Cancer Institute-Cancer Therapy Evaluation Program (NCI-CTEP)

NIH/ORDA Receipt Date: 6-18-97. Sole FDA Review Recommended by NIH/ORDA: 9-18-97

93 9706-194 (Open) Gene Therapy/Phase II/Infectious Disease/Human Immunodeficiency Virus/Immunotherapy/In Vivo/Autologous Muscle Cells/Retrovirus/HIV-1 IIIIB Envelope Protein/Intramuscular Injection

Aboulafia, David; Virginia Mason Clinic, Seattle, Washington; Campbell, Thomas; University of Colorado Health Sciences Center, Denver, Colorado; Kumar, Princy; Georgetown University Medical Center, Washington, D.C.; Murphy, Robert; Northwestern University Medical School, Chicago, Illinois; Skolnik, Paul; New England Medical Center, Boston, Massachusetts; Wheat, Joseph; Indiana University Hospital, Indianapolis, Indiana; *A Phase II, Randomized, Double Blind Placebo Controlled Study of Combination Drug Anti-Retroviral Therapy to Include a Reverse Transcriptase Inhibitor and a Protease Inhibitor Plus HIV-1(TV) or Placebo in HIV Patients with CD4+ Counts  $\geq 100$ , and HIV RNA  $\geq 1K$ , and  $\leq 16K$*  Sponsor: Chiron Corporation

NIH/ORDA Receipt Date: 6-23-97. Sole FDA Review Recommended by NIH/ORDA: 8-15-97

94 9706-195 (Open) Gene Therapy/Phase I/Cancer/Immunotherapy/CEA-Expressing Malignancies/In Vivo/Vaccinia Virus/Carcinoembryonic Antigen cDNA/Intradermal and Subcutaneous Injections

Conry, Robert M.; The University of Alabama at Birmingham, Birmingham, Alabama; *A Phase I Trial of a Recombinant Vaccinia-CEA (180 kD) Vaccine Delivered by Intradermal Needle Injection Versus Subcutaneous Jet Injection in Patients with Metastatic CEA-Expressing Adenocarcinoma* Sponsor: Drug Regulatory Affairs Branch, Cancer Therapy Evaluation Program (CTEP), Division of Cancer Treatment, Diagnosis and Centers, NCI, NIH

NIH/ORDA Receipt Date: 6-26-97. Sole FDA Review Recommended by NIH/ORDA: 9-5-97

95 9706-196 (Open) Gene Therapy/Phase I/Monogenic Disease/Chronic Granulomatous Disease/In Vivo/G-CSF Mobilized CD34+ Autologous Peripheral Blood Cells/Retrovirus/gp91phox/intravenous infusion

Smith, Franklin O., and Dinanur, Mary C.; Indiana University School of Medicine, Indianapolis, Indiana; *Fibronectin-Assisted, Retroviral-Mediated Transduction of CD34+ Peripheral Blood Cells with gp91 phox in Patients with X-Linked Chronic Granulomatous Disease: A Phase I Study*

NIH/ORDA Receipt Date: 6-30-97. Sole FDA Review Recommended by NIH/ORDA: 7-21-97

196 9705-197 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vivo/Autologous Melanoma Cells/Canarypox Virus/87(CD80)/Interleukin-12/Cytokine/Intratumoral Injection

Conry, Robert M.; University of Alabama at Birmingham, Birmingham, Alabama; Phase II Trial of Intratumoral Injection of a Recombinant Canarypox Virus Encoding Human B7.1 (ALVAC-hB7.1) or a Combination of ALVAC-hB7.1 and a Recombinant Canarypox Virus Encoding Human Interleukin-12 (ALVAC-hIL-12) in Patients with Surgically Incurable Melanoma Sponsor: National Cancer Institute-Cancer Therapy Evaluation Program (NCI-CTEP)

NIH/ORDA Receipt Date: 9-30-97. Sole FDA Review Recommended by NIH/ORDA: 9-5-97

197 9707-198 (Open) Gene Therapy/Phase III/Cancer/Colorectal Carcinoma Expressing TAG-72/In Vitro/Autologous CD8+ and CD4+ T Lymphocytes/Retrovirus/CC49-Zeta T Cell Receptor/Intravenous Infusion

Venock, Alan and Warren, Robert S.; University of California, San Francisco, California and Fisher, George; Stanford University, Palo Alto, California; A Phase III Study of Autologous CC49-Zeta Gene-Modified T Cells and  $\alpha$ -Interferon in Patients with Advanced Colorectal Carcinomas Expressing the Tumor-Associated Antigen, TAG-72 Sponsor: Cell Genesys, Inc.

NIH/ORDA Receipt Date: 7-7-97. Sole FDA Review Recommended by NIH/ORDA: 8-26-97

198 9707-199 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Breast/Head and Neck Cancer/Cutaneous T-Cell Lymphoma/Immunotherapy/In Vitro/Autologous Fibroblasts/Lethally Irradiated/Retrovirus/Cytokine/Interleukin-12/Intratumoral Injection

Park, Chan H.; Samsung Medical Center, Seoul, Korea; Kim, Sunyoung; Seoul National University, Seoul, Korea; Lotze, Michas; Tahara, Hideo; and Robbins, Paul; University of Pittsburgh, Pittsburgh, Pennsylvania; IL-12 Gene Therapy Using Direct Injection of Tumors with Genetically Engineered Autologous Fibroblasts

NIH/ORDA Receipt Date: 7-22-97. Sole FDA Review Recommended by NIH/ORDA: 10-30-97

199 9707-200 (Open) Gene Therapy/Phase III/Cancer/Non-Hodgkin's B-Cell Lymphoma/Mantle Cell Lymphoma/Immunotherapy/In Vivo/Naked Plasmid DNA/Tumor Idiotype/Intramuscular Injection

Levy, Ronald; Stanford University School of Medicine, Stanford, California; A Phase III Study of Vaccine Therapy for B-Cell Lymphoma Utilizing Plasmid DNA Coding for Tumor Idiotype Sponsor: Vical, Inc.

NIH/ORDA Receipt Date: 7-24-97. Sole FDA Review Recommended by NIH/ORDA: 8-13-97

200 9707-201 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Immunotherapy/In Vitro/Autologous Tumor Cells/Canarypox Virus/87.1 (CD80)/Intraperitoneal Injection

Freedman, Ralph; The University of Texas, M.D. Anderson Cancer Center, Houston, Texas; Intraperitoneal (IP) Autologous Therapeutic Tumor Vaccine (AUT-OV-ALVAC-hB7.1) plus IP rIFN- $\gamma$  for Patients with Ovarian Cancer: A Pilot Study Sponsor: NCI Cancer Therapy Evaluation Program (NCI-CTEP)

NIH/ORDA Receipt Date: 7-28-97. Sole FDA Review Recommended by NIH/ORDA: 8-15-97

201 9707-202 (Open) Gene Therapy/Phase I/Immunotherapy/Cancer/Melanoma/In Vitro/Autologous Tumor Cells/Lethally Irradiated/Adenovirus/Serotype 5/Cytokine/Granulocyte-Macrophage Colony Stimulating Factor (GM-CSF)/Subcutaneous Injection

Dranoff, Glenn and Soffer, Robert; Dana-Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts; A Phase I Study of Vaccination with Autologous, Lethally Irradiated Melanoma Cells Engineered by Adenoviral Mediated Gene Transfer to Secrete Human Granulocyte-Macrophage Colony Stimulating Factor

NIH/ORDA Receipt Date: 7-28-97. Sole FDA Review Recommended by NIH/ORDA: 8-15-97

202 9707-203 (Open) Gene Therapy/Phase I/Immunotherapy/Cancer/Non-Small Cell Lung Carcinoma (NSCLC)/In Vitro/Autologous Tumor Cells/Lethally Irradiated/Adenovirus/Serotype 5/Cytokine/Granulocyte-Macrophage Colony Stimulating Factor (GM-CSF)/Subcutaneous Injection

Dranoff, Glenn and Saitta, Ravi; Dana-Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts; A Phase I Study of Vaccination with Autologous, Lethally Irradiated Non-Small Cell Lung Carcinoma Cells Engineered by Adenoviral Mediated Gene Transfer to Secrete Human Granulocyte-Macrophage Colony Stimulating Factor

NIH/ORDA Receipt Date: 7-28-97. Sole FDA Review Recommended by NIH/ORDA: 8-15-97

203

9707-204 (Open) Gene Therapy/Phase I/Monogenic Disease/Leukocyte Adherence Deficiency (LAD)/In Vitro/G-CSF Mobilized CD34+ Autologous Peripheral Blood Cells/Retrovirus/CD18/Intravenous Infusion

Hickstein, Dennis; University of Washington School of Medicine, Seattle, Washington; *Retrovirus-Mediated Transfer of the cDNA for Human CD18 into Peripheral Blood Repopulating Cells of Patients with Leukocyte Adherence Deficiency*

NIH/ORDA Receipt Date: 7-31-97. Sole FDA Review Recommended by NIH/ORDA: 9-17-97

204

9708-205 (Open) Gene Therapy/Phase III/Cancer/Prostate/Immunotherapy/In Vitro/Allogeneic Tumor Cells/Lethally Irradiated/Retrovirus/Cytokine/Granulocyte-Macrophage Colony Stimulating Factor/Subcutaneous Injection

Sirons, Jonathan W.; Johns Hopkins Oncology Center, Baltimore, Maryland; *Phase III Study of Allogeneic Human GM-CSF Gene Transduced Irradiated Prostate Cancer Cell Vaccines in Patients with Prostate Cancer*

NIH/ORDA Receipt Date: 8-19-97. Sole FDA Review Recommended by NIH/ORDA: 9-9-97

205

9708-206 (Open) Gene Therapy/Phase III/Cancer/Chronic Myelogenous Leukemia/Adoptive-Immunotherapy/In Vitro/Donor CD8+ and CD4+ Lymphocytes/Retrovirus/Hygromycin Phosphotransferase-Herpes Simplex Thymidine Kinase Fusion Gene/Intravenous Infusion

Flowers, Mary E. D. and Riddell, Stanley; Fred Hutchinson Cancer Research Center, Seattle, Washington; *Infusion of Polyclonal HyTK (hygromycin phosphotransferase and HSV thymidine kinase gene)-transduced Donor T Cells for Adoptive immunotherapy in Patients with Relapsed CML after Allogeneic Stem Cell Transplant: Phase I-II Clinical Trial*

NIH/ORDA Receipt Date: 8-19-97. Sole FDA Review Recommended by NIH/ORDA: 9-26-97

206

9708-207 (Open) Gene Therapy/Phase I/Cancer/Colorectal/Immunotherapy/In Vivo/Autologous Tumor Cells/Canarypox Virus/Carcinoembryonic Antigen/B7.1 (CD80)/Intradermal Scarification

Kaufman, Howard L.; Albert Einstein Cancer Center, Bronx, New York; *Phase I Clinical Trial of a Recombinant ALVAC-CEA-B7 Vaccine in the Treatment of Advanced Colorectal Carcinoma*. Sponsor: National Cancer Institute-Cancer Therapy Evaluation Program (NCI-CTEP)

NIH/ORDA Receipt Date: 8-21-97. Sole FDA Review Recommended by NIH/ORDA: 11-25-97

207

9708-208 (Open) Gene Therapy/Phase I/Cancer/Mesothelioma/Pro-Drug/In Vivo/Allogeneic Tumor Cells/Lethally Irradiated/Retrovirus/Herpes Simplex Virus Thymidine Kinase/Ganciclovir/Intrapleural Administration

Schwarzenberger, Paul; Louisiana State University Medical Center, New Orleans, Louisiana; *The Treatment of Malignant Pleural Mesothelioma with a Gene-Modified Cancer Vaccine: A Phase I Study*

NIH/ORDA Receipt Date: 8-25-97. Sole FDA Review Recommended by NIH/ORDA: 9-16-97

208

9708-209 (Open) Non-Therapeutic/In Vivo/Bronchial Epithelial Cells/Adenovirus/serotype 5/E. coli Cytosine Deaminase/Intrabronchial Administration

Harvey, Ben-Gary and Crystal, Ronald G.; Rockefeller University Hospital, New York, New York; *Systemic and Respiratory Immune Response to Administration of an Adenovirus Type 5 Gene Transfer Vector (Ad<sub>5</sub>-CD<sub>10</sub>)*

NIH/ORDA Receipt Date: 8-28-97. Discussed at the December 16, 1997 RAC meeting

209

9709-210 (Open) Gene Therapy/Phase I-II/Cancer/Melanoma/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE/Vical VCL-1005/HLA-B\*72-Macroglobulin cDNA/Direct Intratumoral Injection

Gonzales, Rene; University of Colorado Cancer Center, Denver, Colorado and Hersh, Evan; Arizona Cancer Center, Tucson, Arizona; *Compassionate Use Protocol for Retreatment with Allovectin-7 Immunotherapy for Metastatic Cancer by Direct Gene Transfer*. Sponsor: Vical, Inc.

NIH/ORDA Receipt Date: 9-8-97. Sole FDA Review Recommended by NIH/ORDA: 9-26-97

210

9708-211 (Open) Gene Therapy/Phase I/Monogenic Disease/Canavan Disease/In Vivo/Autologous Brain Cells/Plasmid DNA/Adeno-associated Virus/Poly-L-Lysine/Cationic Liposome Complex/DC-Chol/DOPE/Asparaginase cDNA/Intracranial (Ommaya Reservoir) Administration

Seashore, Margretta, R.; Yale University, New Haven, Connecticut; *Gene Therapy of Canavan Disease: Retreatment of Previously Treated Children*

NIH/ORDA Receipt Date: 8-28-97. Discussed at the December 16, 1997 RAC meeting

21 8709-212 (Open) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE Vical VCL-1005/HLA-B7/Beta-2 Microglobulin cDNA/Vical-1102/Interleukin-2 cDNA/Intratumoral Injection

Gonzalez, Rene; University of Colorado Health Sciences Center, Denver, Colorado; Hersh, Evan M.; Arizona Cancer Center, Tucson, Arizona; Rubin, Joseph; Mayo Clinic, Rochester, Minnesota; and Thompson, John A.; University of Washington Medical Center, Seattle, Washington; *Phase I Study of Direct Gene Transfer of HLA-B7 Plasmid DNA/DMRIE/DOPE Lipid Complex (Allovecitin-7) with IL-2 Plasmid DNA/DMRIE/DOPE Lipid Complex (Leuvectin) as an Immunotherapeutic Regimen in Patients with Metastatic Melanoma*. Sponsor: Vical, Inc.

NIH/ORDA Receipt Date: 8-18-97. Sole FDA Review Recommended by NIH/ORDA: 10-8-97

212 8709-213 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/In Vivo/Autologous CD8+ T Cells/Retrovirus/CD4-Zeta Chimeric Receptor/Intravenous

Deeks, Steven G.; University of California, San Francisco General Hospital, San Francisco, California; *A Phase II Study of Autologous CD4-Zeta Gene Modified T Cells in HIV-infected Patients with Undetectable Plasma Viremia on Combination Antiretroviral Drug Therapy*. Sponsor: Cell Genesys, Inc.

NIH/ORDA Receipt Date: 9-22-97. Sole FDA Review Recommended by NIH/ORDA: 10-10-97

213 8709-214 (Open) Gene Therapy/Phase II/Cancer/Head and Neck Squamous Cell Carcinoma/Tumor Suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53

Breau, Randall L.; University of Arkansas for Medical Sciences, Little Rock, Arkansas; Clayman, Gary L.; The University of Texas MD Anderson Cancer Center, Houston, Texas; Yoo, George H.; Wayne State University/Barbara Ann Karmanos Cancer Institute, Detroit, Michigan; Medina, Jesus E.; University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma; Murphy, Barbara S.; Vanderbilt University Medical Center, Nashville, Tennessee; Goodwin, W. J.; University of Miami Hospitals and Clinics, Miami, Florida; Weber, Jeffery S.; University of Southern California, Los Angeles, California; Schuster, David E.; Ohio State University Medical Center, Columbus, Ohio; Bukowski, Ronald M.; The Cleveland Clinic Foundation, Cleveland, Ohio; Hamm, John; University of Louisville Health Sciences Center, Louisville, Kentucky; Agarwala, Sanjiv; University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania; Posner, Marshall R.; Dana-Farber Cancer Institute, Boston, Massachusetts; and Hochster, Howard S.; New York University Medical Center, New York, New York; *A Phase II Multi-Center, Open Label, Randomized Study to Evaluate Effectiveness and Safety of Two Treatment Regimens of Ad5CMV-p53 Administered by Intra-Tumoral Injections in 78 Patients with Recurrent Squamous Cell Carcinoma of the Head and Neck (SCCHN)*. Sponsor: Genecell (Division of Rhone-Poulenc Rorer Pharmaceuticals)

NIH/ORDA Receipt Date: 9-22-97. Sole FDA Review Recommended by NIH/ORDA: 10-21-97

214 8709-215 (Open) Gene Therapy/Phase I/Cancer/CEA-Expressing Malignancies/Immunotherapy/In Vivo/Autologous Tumor Cells/Canarypox Virus/Carcinoembryonic Antigen/B7.1 (CD80)/Intramuscular and Intradermal Injections

von Mehren, Margaret; Fox Chase Cancer Center, Philadelphia, Pennsylvania; *Phase I/Pilot Study of ALVAC-CEA-B7.1 Immunization in Patients with Advanced Adenocarcinoma Expressing CEA*. Sponsor: National Cancer Institute - Cancer Therapy Evaluation Program (NCI-CTEP)

NIH/ORDA Receipt Date: 9-24-97. Sole FDA Review Recommended by NIH/ORDA: 10-28-97

215 8709-216 (Open) Gene Therapy/Phase I/Cancer/Breast/Tumor Suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Cutaneous or Subcutaneous

von Mehren, Margaret; Fox Chase Cancer Center, Philadelphia, Pennsylvania; *Phase I/Pilot Study of p53 Intralosomal Gene Therapy with Chemotherapy in Breast Cancer*. Sponsor: National Cancer Institute - Cancer Therapy Evaluation Program (NCI-CTEP)

NIH/ORDA Receipt Date: 9-24-97. Sole FDA Review Recommended by NIH/ORDA: 10-28-97

216 8710-217 (Open) Gene Therapy/Phase I/IV/Cancer/Prostate/Tumor Suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intratumoral Injection

Logothetis, Christopher J.; University of Texas MD Anderson Cancer Center, Houston, Texas; *A Tolerance and Efficacy Study of Intraprostatic INGN 201 Followed by Pathological Staging and Possible Radical Prostatectomy in Patients with Locally Advanced Prostate Cancer*. Sponsor: Introgen Therapeutics, Inc.

NIH/ORDA Receipt Date: 10-3-97. Sole FDA Review Recommended by NIH/ORDA: 11-4-97

217 9710-218 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/Hammerhead Ribozyme/In Vitro/CD34+ Autologous Peripheral Blood Cells/Retrovirus/Tat and Rav Hammerhead Ribozyme/Intravenous

Krishnan, Amrita and Zeis, John, A.; City of Hope Medical Center, Duarte, California; *High Dose Chemotherapy and Autologous Peripheral Stem Cell Transplantation for HIV Lymphomas: A Phase IIa Study of Comparative Marking Using a Ribozyme Gene and a Neutral Gene* Sponsor: Ribozyme Pharmaceuticals, Inc.

NIH/ORDA Receipt Date: 10-6-97. Sole FDA Review Recommended by NIH/ORDA: 10-27-97

218 9710-219 (Open) Gene Therapy/Phase I/Cancer/Bladder/Tumor Suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intravesical Administration

Pagliaro, Lance C.; The University of Texas MD Anderson Cancer Center, Houston, Texas; *A Phase I Trial of Intravesical Ad-p53 Treatment in Locally Advanced and Metastatic Bladder Cancer*

NIH/ORDA Receipt Date: 10-21-97. Sole FDA Review Recommended by NIH/ORDA: 11-10-97

219 9710-220 (Open) Gene Therapy/Phase III/Cancer/Non-Small Cell Lung Cancer/Tumor Suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Bronchoscopy or Percutaneous Intratumoral Injection

Dobbs, Tracy W.; East Tennessee Oncology/Hematology, P.C., Knoxville, Tennessee; *A Phase II Gene Therapy Study in Patients with Non-Small Cell Lung Cancer Using SCH 58500 (Ad/p53) in Combination with Chemotherapy for Multiple Cycles* Sponsor: Schering Plough Research Institute

NIH/ORDA Receipt Date: 10-31-97. Sole FDA Review Recommended by NIH/ORDA: 12-15-97

220 9711-221 (Open) Gene Therapy/Phase I/Other/ Coronary Artery Disease/In Vivo/Ischemic Myocardium/Adenovirus/Serotype 5/Vascular Endothelial Growth Factor (VEGF) cDNA/Cardiac Administration

Cristof, Ronald G.; The New York Hospital-Cornell Medical Center, New York, New York; *Phase I Study of Direct Administration of a Replication-Deficient Adenovirus Vector (Ad<sub>5</sub>-VEGF121.10) Containing the VEGF121 cDNA to the Ischemic Myocardium of Individuals with Life Threatening Diffuse Coronary Artery Disease* Sponsor: GenVec, Inc.

NIH/ORDA Receipt Date: 11-4-97. Discussed at the December 18, 1997 RAC meeting

221 9711-222 (Open) Gene Therapy/Phase I/Monogenetic Disease/Canavan Disease/In Vivo/Autologous Brain Cells/Plasmid DNA/Adeno-Associated Virus/Protamine/Cationic Liposome Complex/DC-Cholesterol-DOPE/Aspartacylase cDNA/Intracranial (Ommaya Reservoir)

Freese, Andrew; Thomas Jefferson University, Philadelphia, Pennsylvania; *Gene Therapy of Canavan Disease*

NIH/ORDA Receipt Date: 11-12-97. Sole FDA Review Recommended by NIH/ORDA: 1-28-98

222 9712-223 (Open) Gene Therapy/Phase I/Cancer/Neuroblastoma/Immunotherapy/In Vitro/Allogeneic Neuroblastoma Cell Lines/Retrovirus/Cytokine/Interleukin-2 (IL-2)/Plasmid/Electroporation/Chemokine/Lymphotactin/Subcutaneous Injection

Bowman, Laura; St. Jude Children's Research Hospital, Memphis, Tennessee; *Phase I Study of Chemokine and Cytokine Gene Modified Allogeneic Neuroblastoma Cells for Treatment of Relapsed/Refractory Neuroblastoma Using a Retroviral Vector*

NIH/ORDA Receipt Date: 12-3-97. Sole FDA Review Recommended by NIH/ORDA: 12-29-97

223 9712-224 (Open) Gene Therapy/Phase I/Cancer/Neuroblastoma/Immunotherapy/In Vitro/Autologous Tumor Cells (Non-Irradiated)/Type 5 Adenovirus/Cytokine/Interleukin-2 (IL-2)/Chemokine/Lymphotactin/Subcutaneous Injection

Bowman, Laura; St. Jude Children's Research Hospital, Memphis, Tennessee; *Phase I Study of Chemokine and Cytokine Gene Modified Autologous Neuroblastoma Cells for Treatment of Relapsed/Refractory Neuroblastoma Using an Adenoviral Vector*

NIH/ORDA Receipt Date: 12-3-97. Sole FDA Review Recommended by NIH/ORDA: 12-29-97

224 9712-225 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/Antisense/In Vitro/Antisense TAR/Transdominant Rev/Intravenous

Isola, Luis M.; Mount Sinai Medical Center, New York, New York; *A Phase I Trial of Autologous and Allogeneic Bone Marrow Transplantation with*

Genetically Marked Cells for the Treatment of HIV Associated Lymphoid Malignancies

NIH/ORDA Receipt Date: 12-15-97. Sole FDA Review Recommended by NIH/ORDA: 1-7-98

9712-226 (Open) Gene Therapy/Phase II/Cancer/Head and Neck Squamous Cell Carcinoma/Tumor Suppressor Gene/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/p53 cDNA/Intratumoral Injections

Dreicer, Robert; University of Iowa College of Medicine, Iowa City, Iowa; Cohn, Allen, University of Colorado Health Sciences Center, Denver, Colorado; Williamson, Stephen, University of Kansas Medical Center, Kansas City, Kansas; VanEcho, David A., University of Maryland School of Medicine, Baltimore, Maryland; Rosan, Fred, University of Illinois at Chicago Hospitals & Clinics; and Endicott, James N., University of South Florida, Tampa, Florida; A Phase II, Multi-Center, Open Label, Study to Evaluate Effectiveness and Safety of Ad5CMV-p53 Administered by Intra-Tumoral Injections in 30 Patients with Recurrent Squamous Cell Carcinoma of the Head and Neck (SCCHN). Sponsor: Genecell (Division Rhone-Poulenc Rorer Pharmaceuticals, Inc.)

NIH/ORDA Receipt Date: 12-17-97. Sole FDA Review Recommended by NIH/ORDA: 1-9-98

9801-227 (Open) Gene Therapy/Phase II/Cancer/Melanoma/Head and Neck Cancer/Immunotherapy/In Vivo/Autologous Fibroblasts/Lethally Irradiated/Retrovirus/Cytokine/Interleukin-12 cDNA/Neomycin Phosphotransferase cDNA/Intratumoral Injection

Lotze, Michael T.; University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania; IL-12 Gene Therapy Using Direct Injection of Tumors with Genetically Engineered Autologous Fibroblasts (A Phase II Study)

NIH/ORDA Receipt Date: 1-2-98. Sole FDA Review Recommended by NIH/ORDA: 2-13-98

9801-228 (Open) Gene Therapy/Phase I/Cancer/Ovarian/Pro-Drug/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Thymidine Kinase cDNA/Acyclovir/Intraperitoneal Injection

Kieback, Dirk G.; Baylor College of Medicine, Houston, Texas; Phase I Study of Concomitant Adenovirus-Mediated Transduction of Ovarian Cancer with HSV-tk Gene Followed by Intravenous Administration of Acyclovir and Chemotherapy with Topotecan in Patients after Optimal Debulking Surgery for Recurrent Ovarian Cancer

NIH/ORDA Receipt Date: 1-14-98. Sole FDA Review Recommended by NIH/ORDA: 2-5-98

9801-229 (Open) Gene Therapy/Phase II/Cancer/Prostate/Pro-Drug/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Thymidine Kinase cDNA/Ganciclovir/Intratumoral Injection

Kadmon, Dov; Baylor College of Medicine, Houston, Texas; Neoadjuvant Pre-radical Prostatectomy Gene Therapy (HSV-tk Gene Transduction Followed by Ganciclovir) in Patients with Poor Prognostic Indicators

NIH/ORDA Receipt Date: 1-16-98. Sole FDA Review Recommended by NIH/ORDA: 2-13-98

9801-230 (Open) Gene Therapy/Phase I/Infectious Disease/Human Immunodeficiency Virus/Replication Inhibition/Antisense/Antisense TAR/Antisense tat/rev/In Vivo/CD34+ Cells/Intravenous

Cowan, Morton J. and Conant, Marcus A.; University of California, San Francisco, San Francisco, California; Evaluation of the Safety and Effects of Ex Vivo Modification and Re-infusion of CD34+ Cells by an Antisense Construct Against HIV-1 in a Retroviral Vector. Sponsor: Enzo Therapeutics, Inc.

NIH/ORDA Receipt Date: 1-20-98. Sole FDA Review Recommended by NIH/ORDA: 3-28-98

9802-231 (Open) Gene Therapy/Phase III/Monogenic Disease/Chronic Granulomatous Disease/In Vivo/CD34+ Autologous Peripheral Blood Cells/Retrovirus/pA7phox/gp81phox/Intravenous

Mauch, Harry L.; National Institutes of Health, Bethesda, Maryland; Gene Therapy Approach for Chronic Granulomatous Disease

NIH/ORDA Receipt Date: 2-2-98. Sole FDA Review Recommended by NIH/ORDA: 2-20-98

9802-232 (Under Review) Gene Therapy/Phase I/Coronary Artery Disease/In Vivo/Ischemic Myocardium/Plasmid DNA/Vascular Endothelial Growth Factor (VEGF) cDNA/Cardiac Administration

Isner, Jeffrey M.; Tufts University School of Medicine, Boston, Massachusetts; Gene Therapy for Myocardial Angiogenesis

NIH/ORDA Receipt Date: 2-3-98.

232 9802-233 (SUBMISSION NOT COMPLETE) Gene Therapy/Phase II/Cancer/Melanoma/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE/Vical-1005/HLA-B7/Beta-2 Microglobulin cDNA/Intratumoral Injection

.....; Phase II Study of Direct Gene Transfer of HLA-B7 Plasmid DNA/DMRIE/DOPE Lipid Complex (Alovecin-7) as an Immunotherapeutic Agent in Patients with Stage III or IV Melanoma with No Treatment Alternatives Sponsor: Vical, Inc.

NIH/ORDA Receipt Date: 2-9-98.

233 9802-234 (SUBMISSION NOT COMPLETE) Gene Therapy/Phase II/Cancer/Melanoma/Immunotherapy/In Vivo/Autologous Tumor Cells/Cationic Liposome Complex/DMRIE-DOPE/Vical-1005/HLA-B7/Beta-2 Microglobulin cDNA/Intratumoral Injection

.....; A Controlled, Randomized Phase III Trial Comparing the Response to Dacarbazine With and Without Alovecin-7 in Patients with Metastatic Melanoma Sponsor: Vical, Inc.

NIH/ORDA Receipt Date: 2-9-98.

234 9802-235 (Under Review) Gene Therapy/Phase I/Cancer/Brain Tumors/Glioblastoma/Vector-Directed Cell Lysis/In Vivo/Autologous Tumor Cells/Herpes Simplex Virus Type 1/Tumor Lysis/Intratumoral Injection

Markert, James; University of Alabama, Birmingham, Alabama; Medlock, Michael; Georgetown University Medical Center, Washington, D.C.; A Dose Escalating Phase I Study of the Treatment of Malignant Glioma with G207, a Genetically Engineered HSV-1 Sponsor: NeuroVir, Inc.

NIH/ORDA Receipt Date: 2-10-98.

235 9802-236 (Under Review) Gene Therapy/Phase I/Cancer/Prostate/Vector-Directed Cell Lysis/In Vivo/Autologous Tumor Cells/Adenovirus Type 5/Replication-competent Virus/Promoter and Enhancer Elements of the Prostate Specific Antigen/Intratumoral Injection

Simons, Jonathan W.; Johns Hopkins University School of Medicine, Baltimore, Maryland; A Phase I Dose Escalation Trial of the Intraprostatic Injection of CN708, a Prostate-Specific Antigen Gene-Regulated Cytolytic Adenovirus, in Patients with Recurrent, Locally Advanced Prostate Cancer Sponsor: Celydon, Inc.

NIH/ORDA Receipt Date: 2-13-98.

236 9802-237 (Under Review) Gene Therapy/Phase I/Rheumatoid Arthritis/In Vivo/Autologous Synovial Cells/Naked Plasmid DNA/Herpes Simplex Virus Thymidine Kinase Gene/Ganciclovir/Intra-Articular Administration

Roessler, Blake J.; The University of Michigan Medical Center, Ann Arbor, Michigan; Molecular Synovectomy by In Vivo Gene Transfer: A Phase I Trial

NIH/ORDA Receipt Date: 2-13-98.

237 9802-238 (Under Review) Gene Therapy/Phase I/Coronary Artery Disease/In Vivo/Ischemic Myocardium/Adenovirus/Serotype 5/Fibroblast Growth Factor (FGF) cDNA/Intracoronary Administration

Lee, Joon S.; University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; Phase 1/2 Study of the Effects of Ascending Doses of Adenovirus Mediated Human FGF-4 Gene Transfer in Patients with Stable Exertional Angina Sponsor: Berlex Laboratories, Inc.

NIH/ORDA Receipt Date: 2-24-98.

238 9802-239 (Open) Gene Therapy/Phase I/II/Cancer/Hepatic Metastasis of Colorectal Carcinoma/Immunotherapy/In Vitro/Autologous CD4+ and CD8+ Lymphocytes/Retrovirus/CC49-Zeta T Cell Receptor/Hepatic Artery Infusion

Bergsland, Emily K.; University of California, San Francisco, San Francisco, California; A Phase III Study of Hepatic Infusion of Autologous CG49-Zeta Gene-Modified T Cells in Patients with Hepatic Metastasis from Colorectal Cancer Sponsor: Cell Genesys, Inc.

NIH/ORDA Receipt Date: 2-25-98. Sole FDA Review Recommended by NIH/ORDA: 3-17-98

239 9802-240 (Open) Gene Therapy/Phase I/Cancer/Non-Small Cell Lung Cancer/Pro-Drug/In Vivo/Autologous Tumor Cells/Adenovirus/Serotype 5/Herpes Simplex Thymidine Kinase Gene/Ganciclovir/Intratumoral Injection

240 9803-241 (Open) Gene Therapy/Phase I/Cancer/Chronic Myelogenous Leukemia/Multiple Myeloma/Non-Hodgkin's Lymphoma/Chronic Lymphocytic Leukemia/Adoptive Immunotherapy/In Vitro/Sibling Peripheral Blood Lymphocytes/Retrovirus/Herpes Simplex Virus Thymidine Kinase/Ganciclovir/Intravenous Infusion

Bensinger, William I.; University of Washington School of Medicine, Seattle, Washington; Parker, Pablo M.; City of Hope National Medical Center, Duarte, California; Henslee-Downey, Peggy J. and Abhyankar, Sunil; Richland Memorial Hospital, University of South Carolina, Columbia, South Carolina; Giralt, Sergio; University of Texas, MD Anderson Cancer Center, Houston, Texas; and Cornetta, Kenneth; Indiana University-Purdue University, Indianapolis, Indiana; A Phase I/II Outpatient, Multicenter, Intrapatient, Multiple Dose Escalation Study of Herpes Simplex Virus Thymidine Kinase (HSV-TK) Transduced Mononuclear Cells in Subjects with Persistent or Relapsed Chronic Myelogenous Leukemia, Chronic Lymphocytic Leukemia, Multiple Myeloma, and Non-Hodgkin's Lymphoma after HLA-Matched Sibling Allogeneic Stem Cell Transplant Sponsor: Chiron Corporation

NIH/ORDA Receipt Date: 3-27-98. Sole FDA Review Recommended by NIH/ORDA: 4-17-98

241 9803-242 (Under Review) Gene Therapy/Phase I/Cancer/Chronic Lymphocytic Leukemia/Immunotherapy/In Vitro/Autologous Leukemic Cells/Adenovirus/Serotype 3/CD 154 cDNA/Intravenous Infusion

Kipps, Thomas J., University of California, San Diego, San Diego, California; A Phase I Study of CD 154 Gene-Transduced Leukemia Cells in Patients with Chronic Lymphocytic Leukemia

NIH/ORDA Receipt Date: 3-30-98.

242 9804-243 (Open) Gene Therapy/Phase I/Other/Peripheral Arterial Disease/In Vivo/Ischemic Lower Limb/Adenovirus/Serotype 5/Vascular Endothelial Growth Factor (VEGF) cDNA/Intramuscular Injection

Crystal, Ronald G., Cornell University Medical College, New York, New York; Phase I Study of Direct Administration of a replication deficient Adenovirus vector (Ad<sub>5</sub>/VEGF121.10) Containing the VEGF121 cDNA to the Ischemic Lower Limb of Individuals with Peripheral Vascular Disease Sponsor: GenVec, Inc.

NIH/ORDA Receipt Date: 4-10-98. Sole FDA Review Recommended by NIH/ORDA: 4-30-98

243 9804-244 (Under Review) Gene Therapy/Phase I/Cancer/Melanoma/Immunotherapy/In Vivo/Cationic Liposome Complex/Plasmid DNA/Interleukin-2 cDNA/Staphylococcus Enterotoxin B (SEB)/Intratumoral Injection

Walsh, Patrick, University of Colorado Health Sciences Center, Denver, Colorado; A Phase I Study Using Direct Combination DNA Injections for the Immunotherapy of Metastatic Melanoma

NIH/ORDA Receipt Date: 4-10-98.

(Scroll down for Summary Table)

TOTAL GENE TRANSFER PROTOCOLS (THERAPY, MARKING and NON- THERAPEUTIC)	107	7	97	1	9	20	3	244
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Review Level 1 = Full RAC review + NIH Director approval + FDA Investigational New Drug (IND) approval. This review process is no longer in effect.

Review Level 2 = Accelerated RAC Review + NIH Office of Recombinant DNA Activities (ORDA) Approval + FDA IND Approval.

This review process is no longer in effect.

Review Level 3 = Sole FDA Review Recommended by NIH/ORDA. Simultaneous submission to NIH(ORDA) required for the purpose of data monitoring and adverse event reporting. This review process is no longer in effect.

Review Level 4 = Sole FDA Review (submission to NIH(ORDA) not required). This is only for non-NIH funded (either direct or collaborative) institutions who elect to submit to NIH(ORDA) under voluntary compliance.

Review Level 5 = Received by NIH(ORDA). Review level pending.

Review Level 6 = Sole FDA Review Recommended by NIH/ORDA. Submission to NIH(ORDA) required for the purpose of data monitoring and adverse event reporting. This review process is currently in effect.

Review Level 7 = Full RAC discussion + FDA approval. This review process is currently in effect.